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BY
William T. Brogan

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1978 ARCHEOLOGICAL INVESTIGATIONS AT ELK CITY LAKE, KANSAS.

by

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Archeology Department

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Submitted to:

The Department of the United States Army

Corps of Engineers

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ABSTRACT

The Elk City lake was constructed on the Elk river in southeast Kansas by the U.S. Army Corps of Engineers. The original archeological work was carried out by the Kansas State Historical Society in cooperation with the National Park Service. The findings of these investigations in the 1960s supplemented by selective informal surveys in the 1970s resulted in the lake area being listed as the Elk River Archeological District on the National Register of Historic Places.

The 1978 investigations conducted by the Society under contract with the Corps of Engineers consisted of survey, as much site testing as funding allowed, reviews of all known sites and the development of a management plan for the archeological resources remaining in the project area. The survey concentrated on project areas which had received little or no work to establish the equivalent of a total non-exclusive project inventory. Seventeen previously unrecorded sites were identified for a total of 103 sites within the project limits.

Twelve sites from the overall project area were selected for testing. The initial work had concentrated upon flood plain habitations; therefore, the sites selected in 1978 were predominately those higher on the valley profile. Tested were rock shelters, extensive burned rock complexes and smaller habitation areas. Recovered materials indicated Early and Middle Ceramic manifestation of the Cuesta phase and Pomona focus. The Archaic period was also represented but in limited quantity.

The management plan emphasizes project impacts upon sites located in three relative zones. Sites in Zone One, construction areas and below the multi-purpose pool elevation, will be obliterated or destroyed. Sites in Zone Two, between the multi-purpose pool and the maximum flood pool elevation, will be eroded by wave action or if in the upper lake areas, be silted over and lost. Sites in Zone Three, on government lands but not in active project areas, can be conserved for study or future interpretation by planned land use.

FOREWORD

A number of individuals deserve recognition for their contributions to this project. Since the initial field survey in 1961, the project was under the general direction of Thomas A. Witty, Jr., State Archeologist. The 1978 field investigations were conducted by Society archeologist Bruce Jones, who left the employ of the Society before completing the draft report of his investigations. The writer began working for the Society as a staff archeologist in 1978. Thus, none of the excavations discussed in this paper are personally familiar to me. However, thanks to the excellent records, this report was possible. In this regard, I would like to thank the archeologists and field crew personnel who participated in the 1961, 1963, 1964, 1965 and 1966 field seasons. The 1978 field crew included Peter Bosch, Carol Henson, Charles Smith, Ernest Carr (foreman) and Linda Watkins.

Special recognition and consideration must also be given to James Marshall who supervised the 1965 and 1966 field seasons. Marshall's excavations at the Infinity site, which resulted in his defining of the Cuesta phase, contributed greatly to our understanding of the cultural history of southeast Kansas. Ernest Carr, an amateur archeologist, who resides in Independence, Kansas, also deserves special thanks. Carr has been unceasing in his efforts to locate and record sites in southeastern Kansas and has worked as a volunteer or foreman on every archeological investigation at Elk City lake. Particular recognition is given to Tom Witty who added criticism as well as support in time of need; to John Reynolds, Assistant State Archeologist, for his support and help on the lithic analysis; to Don Rowlison for helping with the ceramics and to Barbara Tibbitts and Belinda Neal for typing the manuscript. Thanks is also given to the personnel from the Society's archeological laboratory for processing the specimens.

The 1978 investigations were conducted under an agreement between the Archeology Department of the Kansas State Historical Society and the U.S. Army Corps of Engineers, Tulsa District. All maps, specimens, photographs and records obtained from the project are housed in the Archeology Department of the Society in Topeka, Kansas. All recommendations presented in this paper were made by the author based upon written field notes, analysis, and data evaluation.

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INTRODUCTION

Elk City lake is situated in the "Chautauqua" region of the Verdigris River Basin in Montgomery county, southeast Kansas. The damsite is on the Elk river, a tributary of the Verdigris river. The dam is located approximately seven miles east of the town of Elk City and five miles northwest of Independence, Kansas. Elk City lake was authorized for construction by the Flood Control Act of 1941 (Howard et al. 1976:2-1).

The initial construction of Elk City lake began in February, 1962, and the project was placed in full operation in March, 1966. At this time, authority was granted to establish a normal conservation pool at an elevation of 792.0 feet mean sea level (MSL) with a maximum flood control elevation of 825.0 feet MSL. The normal conservation pool is subject to fluctuations in accordance with the seasonal pool plans to allow aquatic growth and to improve the fishery.

Archeologically, the evidence used in this paper was recovered from 103 archeological sites. The survey, testing, and excavations were carried out during 1961 (Witty 1962), 1963 (Frantz 1964), 1964 (Weakly 1965), 1965, 1966 (Marshall 1972) and 1978 by the Archeology Department of the Kansas State Historical Society originally under contract with the National Park Service and more recently for the Tulsa District, Corps of Engineers.

Below is a brief description of the methodology and techniques employed at Elk City lake. This is necessary because various institutions use different methods of recording archeological data. The method used during the aforementioned field seasons was designed in the Laboratory of Anthropology, University of Nebraska by Champe (1948). Initial excavations or test pits are assigned numbers which coincide with the standard record sheet page number upon which they are recorded. All excavation numbers are preceded by the letter X. Features consist of particular specimens or evidence which the archeologist wishes to note. Feature numbers are preceded by the letter F and are assigned by the page number of the standard record sheet upon which it is recorded. The archeologist either uses a formal grid system or randomly places the excavation units depending upon such factors as surface indicators and/or topographic settings. Each excavated or tested site has a plan table map and two series of photographs, one black and white and the other colored slides.

The U.S. Standard Measurement System was utilized prior to the Society's adoption of the metric system in June of 1975. This report will carry the original measurement units along with the appropriate metric equivalent in parenthesis, e.g., 25 miles (40 km).

An excavated site may be divided into areas, and each area is assigned a three-digit number. An example of this would be 781. The first two digits indicate the year in which the area was excavated, in this case 1978. The last digit is assigned to the specific area within the site as identified in the site records, usually in the order in which they were considered within the site. This method of assigning numbers to specific areas of a site is a useful organizational tool especially when employed at a site which is excavated over a number of different seasons by different archeologists.

From an analytical standpoint, the ceramic collections are grouped according to similar structural and decorative characteristics into previously designated types and wares. A ceramic type is "determined by the totality of characteristics which make any given ceramic group different from all others" (Spaulding 1948:78). The surface finish, paste, form, appendages, and decorations are the important characteristics which determine a type. The ceramic ware is a group of pottery types that is defined on the basis of similarities of structural elements attributed to each type rather than decorative elements or form (Spaulding 1948:78).

Projectile points are inserted into established typed designations wherever possible. These point types have previously been described by Bell (1958 and 1960) in *Guide to the Identification of Certain American Indian Projectile Points*. All of the remaining stone artifacts are grouped according to previously described functional purposes.

When discussing the significance of an archeological site, content and stratigraphic evidence is used to formulate components which are manifestations of a single cultural occupation at an archeological site (Willey and Phillips 1958:18 and 21). Different components are then correlated with one another and on the basis of recurring elements which distinguish one component from another, phases are then defined. Spatial and temporal factors are also employed as a criteria for defining a phase. "A phase is an archeological unit possessing traits sufficiently characteristic to distinguish it from all other units similarly conceived, whether of the same or other cultures or civilizations, spatially limited to the order of magnitude of a locality or region and chronologically limited to a relatively brief interval of time" (Willey and Phillips 1958:22).

When discussing the local sequence for the Elk City lake area, which has previously been described by Marshall (1972), it is necessary to delineate the geographical limit or the locality. The locality, in this case, is the section of the Elk river valley

in Montgomery county, Kansas that was inundated by the Elk City lake.

RESEARCH DESIGN AND ORIENTATION

General as well as specific archeological problems were addressed during this study. Of initial importance to the cultural resource management plan was the drawing together of data obtained for the large amount of informal and opportune times of survey. Since the project's inception in 1961, survey work has been ongoing in the Elk City lake locality resulting in one of the most complete cultural resource lists for any lake in the state. Most of this work was noncontractual and therefore, this was the first opportunity to present a summary of these investigations. Additional survey work was necessary during the 1978 field season to identify those areas not previously examined in order to complete the equivalent of a non-exclusive survey of all Corps owned and/or controlled property. This portion of the research plan was conducted by Ernest Carr and 17 previously unrecorded archeological sites were located.

Of primary concern in forming the cultural resource management plan was to investigate the affects of periodic inundation on archeological sites. This includes those sites located between the limits of the multiple purpose pool and maximum flood pool elevations of the lake. Jones tested 10 sites in this locale and they included 14MY325, 14MY334, 14MY341, 14MY342, 14MY350, 14MY378, 14MY1349, 14MY1350, 14MY1351 and 14MY1353. The results of these investigations will be presented later in this paper.

Another segment of the research design was to investigate a few of the rock shelters located in the Elk City lake locality. A particular site type not identified during the initial 1960s investigations, the rock shelter research had thus far been limited to survey activity. Accordingly, it is necessary to test a few of these sites to determine the depth and areal extent of the cultural deposits. Jones eventually tested three rock shelter sites; 14MY378, 14MY1310 and 14MY1353, the results of which will be presented in the 1978 Investigations section of this report.

Finally, a few of the sites in the Elk City lake locality contained an extremely large amount of burned rock exposed on the surface. These burned rock complexes have become apparent from work in the last decade and have been investigated and reported in Oklahoma (Barr 1964) and Texas (Vaughan 1975; Barr 1964). Accordingly, Jones tested two of the Elk City sites with

rock complexes to seek a functional explanation for such unique occurrences of burned stone. These two sites are 14MY342 and 14MY1351, both described at length in this paper.

METHODOLOGY

A variety of survey methods were employed in the Elk City lake vicinity, and these are best described by King (1978). Basically, the majority of the sites were located during the traditional pedestrian survey of the area. Once located and recorded, these sites are evaluated for their potential archeological significance. If a site appears to bear potential of yielding significant archeological information, a test is normally recommended.

The continuing noncontractual involvement of the Society with site identification and recording in the Elk City lake was a major factor of the research plan for determining the actual survey effort during the 1978 field season. Almost all of the project lands that had moderate to good potential for sites to be present had been subjected to periodic observation over the years.

For most recorded sites, the physical condition and some assessment information was already available in the Society records. Since the funding was limited, the principal investigator proposed that not all known sites needed to be revisited. Therefore, the major effort was to intensively examine those areas that had not yet been surveyed. This data, when combined with the earlier findings, will provide a relatively complete non-exclusive survey for the project.

The scheme for testing was aided by years of work at Elk City and the nearby Big Hill lake project. The concentration on flood plain habitation sites resulted in significant cultural identifications. With the flooding of the valley, emphasis shifted to the valley edges and a variety of additional site types became apparent. Specifically, these included sites with massive burned stone concentrations, several rock shelters and smaller habitation units. Funding did not permit testing of all the sites. Therefore, those sites that were selected for testing were those "new" site types.

Testing of an archeological site consists of selecting areas which appear to have potential of yielding in situ cultural remains. These remains consist of hearths, refuse areas, post mold patterns, artifacts, or other aboriginal remains which have not been disturbed by natural processes or more recent cultural land altering activities. If the surface of the site has been

disturbed through agricultural activities, the archeologist normally searches for exposed concentrations of burned limestone or sandstone, chert chips or flakes, bone concentrations, depressions in the ground surface, artificial mounds, and other evidence of human occupation. The archeologist normally will excavate a test pit or trench in these areas to determine whether an undisturbed subsurface feature exists. If these remains are located, further archeological investigations are normally recommended. Sites which are not set aside for agricultural usage and therefore lack obvious surface indicators may be randomly tested with coring devices and/or excavation pits or trenches. When testing indicates the presence of significant archeological data, a full-scale excavation may be recommended to obtain pertinent data. All test excavations completed during the 1978 field season were backfilled by the excavators.

An excavation differs from a test because theoretical hypotheses are normally tested during an excavation. Quantities of overburden are removed to expose the living floor. The digging mechanics are normally the same as a test, but certain hypotheses normally dictate the direction of the excavation. When a feature is located, i.e., a post mold or a hearth, the archeologist will normally test certain hypotheses concerning such phenomena as settlement patterns, burial practices, spatial relationships, and other cultural phenomena. The main difference between a test and a full-scale excavation is that the test tells us yes, there is probably significant information present at the site, and the excavation normally tells us how significant this information is. The ultimate purpose of the excavation is to reconstruct the lifeways of a now extinct culture through the material remains which have been left behind.

The Scope of Work dictated several specific criteria to be considered during the assessment of the cultural resources at Elk City lake. These include:

(a) A reconnaissance of the Elk City lake to locate, describe and evaluate historical and archeological resources on Corps land.

(b) Minimal testing at selected sites to determine the depth and areal extent of the cultural deposits.

(c) Complete an on-foot coverage of the project area to determine specific site locations.

(d) A literature and records search which, when combined with the field data, shall provide the basis for the written report.

The investigation report shall include:

(a) An abstract detailing the most significant data resulting from the investigations.

(b) A summary description of the environment, the cultural history of the area, previous archeological research, the archeological problems addressed in the study, and the excavation methods and techniques utilized.

(c) An updated inventory of the cultural resources, an evaluation of the present condition of the sites, and the results of any specific analysis performed.

(d) A cultural resource management plan consisting of recommendations for data recovery, if necessary, and site preservation on a site by site basis.

ENVIRONMENTAL DESCRIPTION

Elk City lake lies primarily within the Osage Cuestas subdivision of the Central or Interior Lowlands physiographic province (Schoewe 1949:262-284). The Osage Cuestas themselves are broad shingle-like escarpments formed by the differential erosion of westward-dipping limestone and shale formations. The limestones and shales in the area represent elements of the Kansas City and Lansing groups of the Missourian series and are of Pennsylvanian age (Department of the Army, Corps of Engineers 1975:2-1). The Chautauqua Hills, formed by Upper Pennsylvanian sandstones of the Douglas group, extend along the western limits of the lake (Schoewe 1949:281-282; Berg et al. 1972:21). The relief in the area of Elk City lake ranges from approximately 700 to 1,100 feet above mean sea level, and the lands adjacent to the lake are either in steeply sloped woods or gently rolling pasture and crop land.

The primary waterway forming the Elk City lake is the Elk river, a mature stream which is part of the extensive Verdigris river basin in Kansas and Oklahoma (Berg et al. 1972:1). The headwaters of the Elk river lie in Greenwood county over 62 miles above the lake. The river and its tributaries drain more than 1,200 square miles in Greenwood, Elk, Wilson, Chautauqua, and Montgomery counties. Six permanent streams are tributary to Elk river in the area of the lake, and they include Duck creek, Salt creek, Card creek, Coon creek, Chetopa creek, and Squaw creek. Other named streams are tributary to Elk river in its upper reaches, and there are also a large number of smaller intermittent unnamed tributaries.

Eight soil types have been identified in the area of Elk City lake (Department of the Army, Corps of Engineers 1975:2-2), and these have been described in detail in Appendix A of this report. Basically, they comprise a series of silt loams and clays found in lowland areas as well as several complexes of upland soils derived primarily from local limestones and shales. A considerable amount of deep fertile soil is present on terrace remnants along the Elk river and its tributaries, although many locations on top of the rocky northern side of the river valley have only a shallow mantle of poor soil.

The climate of the region is continental and is characterized by dramatic seasonal fluctuations in precipitation and temperature. The average annual precipitation for the Elk City lake area is just over 36 inches (Flora 1948:26; Department of the Army, Corps of Engineers 1975:2-1), with the majority falling as late spring-early summer rains. The maximum July temperature in the area

averages 94 degrees Fahrenheit while the minimum January temperature averages 23 degrees Fahrenheit. The growing season is approximately 200 days in length (Flora 1948:223-225; Department of the Army, Corps of Engineers 1975:2-1) with the first killing frost occurring near October 23 and the last near April 14. The prevailing winds in the area are southerly.

Four biotic provinces, the Illinoian, the Texan, the Carolinian, and the Kansan, are represented in the four basic vegetative types extant in the vicinity of the lake (Youngman and Hohl 1972:1-8). The vegetative types include a post oak-blackjack oak association, an oak-hickory association, an elm-ash-cottonwood association, and bluestem prairie (Department of the Army, Corps of Engineers 1975:2-2). A detailed description of the four types has been presented in Appendix B. The extremely large faunal inventory in the Verdigris basin is emphasized by the presence of 200 species of fish, amphibians, reptiles, and mammals and over 300 species of birds (Distler et al. 1972). A detailed list of these is presented in Appendix C.

Elk City lake is one part of a three part system of flood control measures in the Kansas portion of the Verdigris river basin (Figure 1). The remaining two parts include Fall river lake on the Fall river and Toronto lake on the Verdigris river (Department of the Army, Corps of Engineers 1975:1-5). When the lake became operational in early 1966 it had a conservation pool level of 792-796 feet MSL at which point it contained 3,550-4,450 surface acres of water and had approximately 50 miles of shoreline. The flood control elevation of the lake is 825 feet MSL, and it contains 13,200 surface acres of water at that stage.

Much of the land acquired by the Corps of Engineers for construction of Elk City lake is now leased to agencies of the state of Kansas. Elk City Lake State Park, authorized in 1967 and operated by the Kansas Park and Resources Authority, occupies 857 acres on the Squaw creek arm of the reservoir (Figure 2). The park includes several camping areas, a swimming beach, a boat ramp, and attendant facilities including showers and rest rooms. The Kansas Fish and Game Commission manages 11,680 acres of land adjacent to the lake, a figure which includes 1,480 acres of wildlife refuge along the southern edge of the lake. The remaining land administered by this agency is primarily leased crop land and pastures. The majority of the leased crop land lies at the upper end of the lake on ground which is periodically inundated during times of high water. The Corps of Engineers has retained responsibility for administration of two recreation areas and several hundred acres of leased grazing and agricultural land at Elk City lake (Department of the Army, Corps of Engineers 1975:1-10).

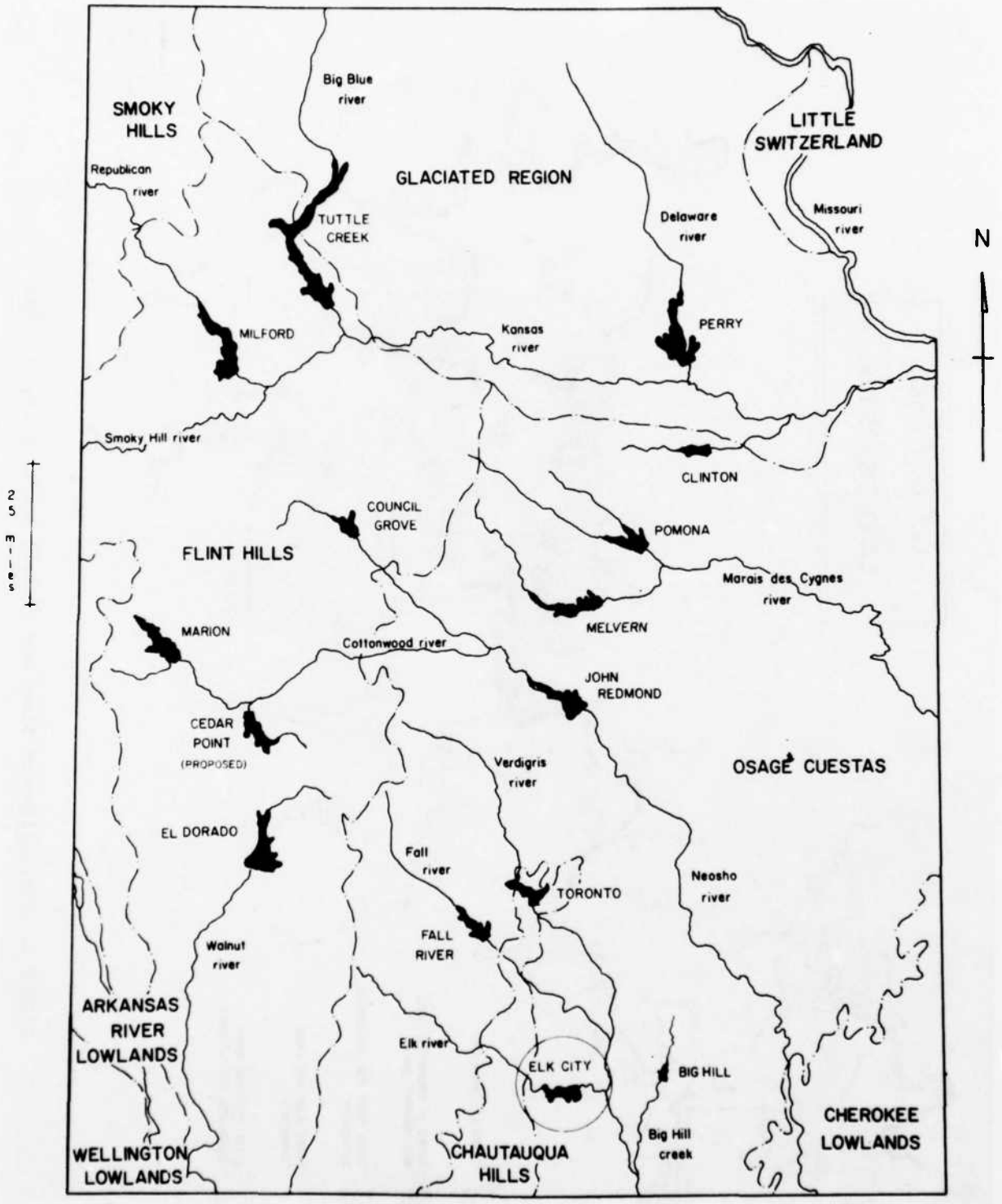

FIGURE 1. Eastern one-third of Kansas. Elk City lake and related water projects.

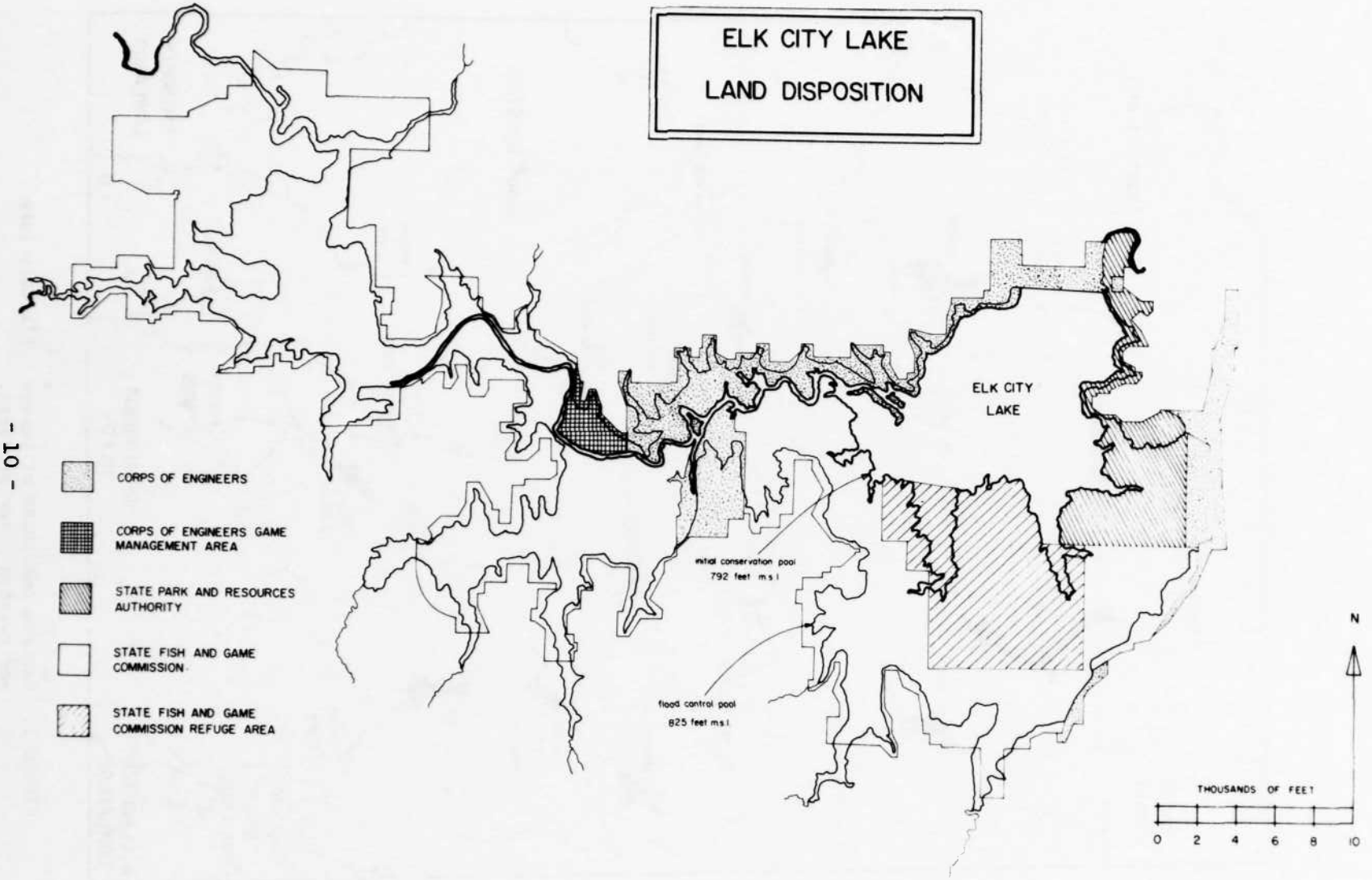

FIGURE 2. Disposition of State and Federal lands at Elk City lake.

CULTURAL-HISTORICAL SETTING

The interpretation and reconstruction of extinct cultures are based primarily upon data recovered from surviving and often limited amounts of cultural remains. This data suggests that southeastern Kansas, including the Elk City lake locality, has been inhabited by various aboriginal groups for several thousand years.

The earliest recognized group of aboriginal people is represented by distinctively chipped stone projectile points which are normally found in association with remains of large mammals which are now extinct, i.e., mammoth and older forms of bison. This is termed the Paleo-Indian period and dates from circa 12,000 to 8,000 B.C. The evidence from Paleo-Indian sites indicates that these people subsisted by hunting these large game animals and probably by supplementing their diet with the collection of wild plant foods. They lived a nomadic type of existence and probably traveled about in small bands. Their sites consisted primarily of "kill" locations where the animals were slain and then butchered. The manifestations from the Paleo-Indian period in southeastern Kansas have been limited to occasional surface finds of distinctively made projectile points. No significant Paleo-Indian site warranting excavation has yet been identified within the general region.

Climatic fluctuations brought an end to the Paleo-Indian period. A great number of animal species became extinct and those which did remain represent our present-day species. The people inhabiting southeast Kansas continued to be hunters and gatherers. Their populations began to increase suggesting further adaptation to the environment. This era is referred to as the Archaic period and dates from circa 8,000 B.C. into the early part of the Christian era.

The artifact assemblage during the Archaic period consists of a larger variety of chipped stone tools. Evidence of grinding slabs indicates an increase in the dependence upon the gathering of wild edible foods. Polished and chipped stone axes and celts also appear during this period. The Archaic sites are still small in comparison to later groups and generally represent temporary camps and sometimes burial sites.

The earliest Archaic component thus far recognized in the Verdigris drainage of Kansas is represented by hearths occurring in similar stratigraphic positions at 14GR307, 14GR301, and other sites which occur in eastern Kansas. A series of radiocarbon dates from these hearths range from 1830 $\pm$ 140 B.C. to 1,300 $\pm$ 140 B.C. (Calabrese 1967:96-97).

One of the better defined and most recognized preceramic manifestations in northeastern Oklahoma has been identified as the Grove focus (Baerreis 1951). This focus consists of three sequential periods which have been determined primarily by the presence and frequency of certain continuing traits in the tool assemblages as well as by the appearance of various new traits. The time range represented by these three periods is from 7,500 B.C. to A.D. 1 (Baldwin 1969:70).

Other preceramic manifestations have been located in the southeastern portion of Kansas. Excavations by the Kansas State Historical Society in the John Redmond reservoir area located an Archaic component known as the Eagle Creek complex (Witty 1963). Radiocarbon dates of 1,650 ± 100 B.C. and 1,550 ± 100 B.C. were obtained from the Archaic level (Witty 1964). Also within this site, 14CF330, human and dog burials were exposed.

The Afton complex has been described as a preceramic entity of the region comprising sections of southeastern Kansas, southwestern Missouri, northwestern Arkansas, and northeastern Oklahoma (Wood 1961:88-90). This complex has been distinguished by diagnostic Afton projectile points (Bell 1958:6-7). Bundle burials in stone and earthen mounds have also been located in affiliation with the Afton complex (Wood 1961:88-90, 115).

Another early preceramic component was identified by Rowlison at site 14LT319 which is in the Big Hill creek drainage (1977:113-125). Site 14LT319 was identified in the cultural resource inventory for the Big Hill lake area which is approximately 32 km east of Elk City. A hearth was identified 1.54 m below the ground surface in level C of 14LT319. A wood charcoal sample was extracted from this feature and a date of approximately 3,600 B.C. was determined (Rowlison 1977:118).

The earliest component located in the Elk City lake locality came from 14MY309 (Weakly 1965). A wood charcoal sample was collected from a deeply buried occupation level exposed in the left bank of the Elk river. The sample was collected from approximately 25 feet (7.62 m) below the ground surface and yielded a radiocarbon date of 1730 ± 180 B.C. (Witty 1965:10). Unfortunately, no diagnostic artifacts were located in this level.

At approximately the beginning of the Christian era, the Archaic period came to a close in Kansas. This is interpreted to be the result of the diffusion of technologies into Kansas from the eastern Woodland areas, i.e., Ohio and Illinois river valleys (Kansas Antiquities Commission 1967). Initially, the

most important changes consisted of the introduction of ceramic manufacturing and possibly domesticated plants. Later in this period, the lithic tool assemblage includes a smaller and lighter stemmed projectile point indicating that the bow and arrow was then being utilized. In archeology, this is very generally referred to as the Woodland period. As this major cultural phenomenon represents intraregional as well as temporal variations, the term Early Ceramic has been proposed (Champe 1946:89).

In much of the eastern United States, a tripartite division of the Woodland period (i.e., Early, Middle and Late) is utilized. In Kansas, so far as the archeological record indicates, there are no Early Woodland complexes comparable to those identified in the Lower Illinois valley, i.e., Marion, Peisker and Black Sand phases (Struever 1968:146). The earliest Woodland manifestations in Kansas appear to be similar to the Middle Woodland complexes identified in the Lower Illinois valley. This is based on a number of comparable traits which exist between the Illinois valley and the eastern portion of Kansas. This comparison is normally based on design motifs on pottery, a similar settlement system, mortuary practices, artifact assemblage, etc.

Wedel (1959:542-557) realized that at least two different Woodland cultural complexes were in part coeval in the Central Plains. The earliest and more complex of the two has been termed the Hopewellian phase due to its obvious relationship to Middle Woodland manifestations in the Lower Illinois river valley. The other, more technologically simpler group, is referred to as the Plains Woodland phase (Wedel 1959:535).

In northeastern Kansas and northwestern Missouri, the archeological record includes settlements which are quite similar to those observed in the Lower Illinois valley. Wedel (1943) noted the similarities between the Hopewellian remains in the Kansas City locality and the Lower Illinois valley. Realizing that the Hopewellian development in the Illinois valley was more intense than in the Kansas City locality, the hypothesis was formed that the Kansas City Hopewell had its origin in the Lower Illinois valley. The suggested dates for the Kansas City Hopewell components, based on a series of radiocarbon dates from sites in northwestern Missouri and northeastern Kansas, is from the beginning of the Christian era to about A.D. 500 (Johnson 1979:87).

Rohn and Daniel (1979:115-116) summarized the Plains Woodland as follows "...Plains Woodland has been applied to cultural complexes found in the grassland environment that exhibit several characteristics of the eastern Woodland

pattern. These may include thick, coarse-tempered, cord-roughened pottery vessels with pointed bottoms and simple rims, large corner-notched or stemmed points, small habitations, apparent use of horticulture, economic exploitation of riparian resources, and occasional burial mounds." The recently defined Grasshopper Falls phase of the Plains Woodland (Reynolds 1979) is an example of a Plains Woodland manifestation in Kansas. Reynolds suggested temporal placement of the Plains Woodland sites associated with the Grasshopper Falls phase is in the range from A.D. 500 to A.D. 1000 (Reynolds 1979:101).

The Elk City lake locality contains the archeological remains of a group of people that have been influenced by the eastern Middle Woodland peoples (Marshall 1972). This information is based upon similarities in design motifs on pottery vessels, a trait that is used to delineate archeological cultural units in the Lower Illinois and Lower Missouri valleys. Other similarities between the eastern Middle Woodland groups and those in the Elk City lake locality include a similar artifact inventory and other associated features. Marshall concluded that two Middle Woodland phases, the Cuesta phase and Hopewell phase, were present in the Elk City lake locality. Therefore, the Cuesta phase and Hopewell phases at Elk City locality. Therefore, the Cuesta phase and Hopewell phases at Elk City lake are more similar to the eastern Middle Woodland groups than to the Plains Woodland groups in Kansas.

Throughout this report, the terms Middle Woodland, Cuesta phase and Early Ceramic period are thought of as being synonomous in Elk City lake. To this writer, the Cuesta phase contains the earliest ceramics recovered from the Elk City lake locality. Hence it is within the Early Ceramic period. Finally, the Cuesta phase complex is fairly similar to Middle Woodland complexes further east; therefore, it is thought of as representing the Middle Woodland period.

The ceramic assemblage associated with the Middle Woodland groups in the Elk City lake locality include several variants. The vessels are primarily medium to large in size with conoidal or rounded bases. A variety of tools were used to impress decorations into the exterior walls of the vessels. The majority of the designs consist of cross-hatching, rocker stamping, dentate stamping, incising, punctating, and cord-wrapped stick impressions. Some of these designs are often confined within zoning lines and are mainly located along the rim, upper body, and shoulder of the vessels.

Sites excavated in the Elk City lake locality indicate that the Cuesta phase people were living in nucleated villages in rather large structures having a long oval floor plan. These houses were randomly placed, but closely grouped together. The widely set posts, and the lack of abundant burned earth, indicates that the houses were constructed of a material which was lighter than earth or sod. Site 14MY305, the Cuesta phase type site, also yielded a midden

area which suggests that the village was occupied for a longer period of time in comparison to preceding Archaic habitation sites.

Excavations to the east of Elk City lake at Big Hill lake have also revealed a Cuesta phase occupation (Rowlison 1977). The settlement pattern in this area consists of extended rather than nucleated villages. These sites are situated along the Big Hill creek and could possibly indicate a different settlement pattern than that which occurs along the main river drainages. The houses in the Big Hill area consist of oval and round floors with concentrations of fired limestone and shallow trash-filled pits surrounded by widely spaced posts which are supports for the exterior walls and roofs of the structures. The ceramics are also quite similar to the Elk City Cuesta sherds.

The stone tools of the Middle Woodland period are quite varied and often a large number of tool forms are located within a single component. The majority of the projectile points consist of triangular blades with either contracting, straight, or expanding stems. The bases may be either straight, concave, or convex. Medium to large sized ovate to triangular-shaped blades were utilized for chipping, drilling, and cutting. Polished stones which were modified by grinding are represented by axes, celts and ornaments. The utilization of bone for tools is quite evident and deer, raccoon, dog, and birds, probably turkey, were the primary sources of bone (Marshall 1972:229).

By approximately A.D. 1000, cultural changes through adaptation and diffusion brought about a population group which is identified as the Middle Ceramic period. The eastern one-third of Kansas is recognized as containing sites of the taxonomically defined Pomona focus (Witty 1967) which is affiliated with this cultural period. The Pomona house structures are generally smaller and of lighter construction than the more formalized earth lodge structures of contemporary Plains Farmer groups to the north and west.

The ceramics associated with the Pomona focus consist of globular-shaped vessels with vertical cord-roughened exterior surfaces. The predominant tempering material consists of small inclusions of indurated clay (possibly decomposed shale) and/or crushed sherds. Decorations are quite rare and are normally confined to the lip of the vessel. The primary decorative motif is usually a series of evenly distributed punctates. Notches impressed into the lip have also been noted. The interior surfaces of the vessel have been smoothed as is indicated by horizontally oriented striations. Rims are mostly straight but sometimes gently flared. Sometimes the lip extends out

over the rim exterior giving the appearance of a rolled lip (Wilmeth 1970:29).

The lithic assemblage of the Middle Ceramic period consists primarily of small, triangular projectile points sometimes with single or double side-notches and/or a single basal notch. The knife forms tend to be triangular with a diamond shape alternately beveled variety frequently being found. Other located tools consist of mullers, grinding slabs, and grooved arrow-shaft abraders.

Evidence from the Elk City lake locality indicates that the Pomona peoples constituted a rather dense population in the area. Marshall (1972) recovered evidence of a Pomona occupation from each of the nine sites incorporated into his study. The temporal placement of the Pomona focus, as determined by radiocarbon dates from Elk City, Pomona reservoir, John Redmond reservoir, Council Grove reservoir, and Wilson reservoir indicate a span from A.D. 1020 $\pm$ 150 to A.D. 1560 $\pm$ 120 (Witty 1967:4). The two radiocarbon dates from the Elk City lake were A.D. 1310 $\pm$ 90 (14MY305) and A.D. 1190 $\pm$ 90 (14MY335), both of which fall into this temporal span.

The last major archeological cultural grouping has been termed the Late Ceramic or Protohistoric period. This period represents the temporal span immediately prior to, during, and after the initial contact with European travelers and explorers. The prime example of this period are the "Quivira" people sought out by Coronado. These people have been identified archeologically as the Great Bend aspect, the probable antecedents of the historic Wichita Indian groups. Artifacts from this period have been identified as close as the Toronto reservoir area, but no Great Bend component has thus far been located in the Elk City locality.

The later historic tribal groups, i.e., Kansa, Missouri, Osage, etc., are also associated with this Late Ceramic period. These times are marked with increasing decadence of the chipped stone tradition and ceramic manufacturing process plus the introduction and ever-increasing dependence upon European made objects.

The Historical period in the Elk City lake locality which arouses archeological interest concerns the locations of the Osage Villages when the tribe occupied portions of southeastern Kansas, then known as the Diminished Reserve of the Osage (McCoy 1890). Following the creation of the Osage District by the Treaty of 1830 with which Congress authorized the establishment of the Indian Territory, there was a period of intertribal conflict that was intensified by the constant pressures applied by the

settlers in order that they might assume ownership of the rich lands that were incorporated as Indian districts. The pressure by the settlers was particularly intense following the close of the American Civil War when displaced army veterans were in search of a new start in life on the then western frontier.

In 1865 the impoverished Osage agreed to the Canville Treaty whereby they sold the United States a 50 x 30 mile block of land taken from the east end of their district. In turn, $300,000 was to be held in trust by the government and interest at the rate of 5% semi-annually paid to the Osage. The treaty was ratified in 1867 and the Osage were allowed six months to vacate the ceded lands. The move brought them west from the Neosho river to the banks of the Verdigris and Elk river. At least two of the seven displaced Osage bands settled on the Elk river itself. A band led by Napawalla is reported to have settled on the north side of the Elk river near Radical City and Chetopa and his band established a village somewhere on the south side of the river near the west end of Table Mound (Andreas 1883:1563).

The locale of site 14MY315 has been referred to as a place of Chetopa's village. The archeological materials recovered from this site, which is situated between the Elk river and west side of Table Mound, did not indicate a historical occupation of any sort (Marshall 1972:243). A few historical items were recovered from the surface of site 14MY305. These items consist of gun flints, a musket ball, a glass bead, sections of clay pipe stems, a pipe bowl and a hair pipe. None of these items are particularly diagnostic except that the Osage were the first in the Plains to use hair pipes as ear pendants (Ewers 1957:75). The other specimens may be attributed to an Osage occupation in that similar specimens have been excavated from an Osage village site in Vernon county, Missouri which is thought to have been occupied in the eighteenth and nineteenth centuries (Chapman 1946:19). Unfortunately, the specimens from site 14MY305 were all gathered from the surface and there was no other archeological evidence that can be utilized to define a specific historic occupation, much less a tribal identification (Marshall 1972:244).

The harassment by settlers to drive the Osage out of Kansas was relentless. Organized groups of raiders stole Osage livestock, raided their caches full of the harvest while the tribes were absent from the villages hunting on the western Plains, and even desecrated their graves. The government seemingly sanctioned the actions of the settlers and was constantly evasive in fulfilling treaty commitments. In 1870, in the face of these factors, the Osage were finally forced to relinquish their constantly diminished lands and retire to a reservation within what is now Oklahoma. A year later, Montgomery county was established as a political unit (Marshall 1972:11).

Elk City is the oldest established town in Montgomery county. The town is an outgrowth of a trading post established at that point by John Kappel in 1868 (Blackmar 1912:572). A town company was formed that same year and the company selected Kappel's claim as the site for the town. Numerous small businesses including a general store, saw mill, stationery store and blacksmith shop were established shortly thereafter.

During the years of 1869 and 1870 there was a large influx of people into the Elk City area. The Elk river valley contains a very fertile soil and the countryside began to fill up with farmsteads. This stimulated and built up the town of Elk City. The population of the town had increased largely, and in the spring of 1871, Elk City assumed the dignity of a third class city (Andreas 1883:1579).

The archeological investigations did not locate any standing structures that were capable of yielding significant historical or archeological data. If these type of structures do exist in this locale, they are probably located in the town itself.

PREVIOUS ARCHEOLOGICAL INVESTIGATIONS

Prior to the archeological investigations conducted in the Elk City lake locality, only a few previously recorded archeological sites were known to exist in southeast Kansas. During the late 1930s, Waldo R. Wedel of the Smithsonian Institution visited the area and located one archeological site. This site, 14MY1, consists of a group of petroglyphs on a sandstone outcrop approximately one mile east of Liberty, Kansas (Wedel 1959:492). Wedel also mentions that he examined several privately owned artifact collections while in the town of Independence. A portion of the ceramic assemblage was recognized by Wedel to have a probable Woodland cultural affiliation (Wedel 1959:552, 557).

During 1951, a student from the University of New Mexico conducted a six-week archeological survey of southeast Kansas (Varner 1951:1-6). The actual field survey was severely restricted due to violent floods in the area. Therefore, the investigations consisted of interviewing local landowners concerning site locations. A total of 13 sites were reported in Montgomery county, but to date these sites have not been confirmed.

Investigations of the reservoir area began in 1961. The survey, testing and later excavations were all carried out by the Archeology Department of the Kansas State Historical Society. During 1961, 12 days were spent conducting an archeological survey of the proposed Elk City reservoir by Tom Witty. The purpose of the survey was to locate and record archeological sites which would be inundated and/or destroyed by the construction and subsequent flooding of the reservoir and to make recommendations for further archeological investigations (Witty 1962).

The survey methodology consisted of interviewing local residents concerning known sites in the area and an actual field survey was conducted of potential areas. Heavy rains and two floods swept through the area during the survey period and this resulted in extensive erosion and silting. This condition, coupled with the presence of the fall crops still being in the fields, somewhat limited the areas which could be surveyed and tested. However, Witty did locate and record a total of 20 previously unrecorded archeological sites within the maximum floodpool.

In order to make recommendations for future archeological investigations, Witty assigned priority ratings to the 20 sites which he located (Witty 1962:23-24). Priority ratings are awarded on the abundance of surface materials located, results of the testing and the cultures represented. Those with an A-1 rating were to receive the first attention; A-2 second; B-1 third; etc.

During the summer of 1963, Wendell Frantz carried out excavations at four sites which lay in an approximate north-south line to the west of Table Mound (Frantz 1964). These four sites had been awarded high priority ratings and were in immediate danger of being destroyed by the construction of the dam. Site 14MY321 was excavated first. A total of eight excavation units were placed in areas where daub and chert debris occurred in fairly dense concentrations on the surface of the site. No major significant features were located although two units each contained a single posthole.

The artifact assemblage at 14MY321 included clay-tempered potsherds, three small stemmed projectile points, worked chert flakes, bone fragments, and a few grinding stone sections. The evidence indicates that 14MY321 contained a Middle Woodland and Pomona focus components. Site 14MY321 was later destroyed by the construction of the dam.

Site 14MY318 was the next site excavated by Frantz (1964:2). An area roughly 40 feet (12.19 m) east-west by 40 feet (12.19 m) north-south was opened to investigate a dense concentration of daub which was exposed on the surface of the site. A total of seven postmolds were located which formed an east-west line across the middle of the excavation unit. A concentration of burned earth, charcoal, burned sandstone, and limestone fragments extended north-south across the excavation. The concentration of material measured 3 feet (.91 m) wide by 15.5 feet (4.72 m) long. Two small basin-shaped pits were also located in the vicinity of this concentration.

The artifact assemblage included a small side-notched projectile point, large and small corner-notched stemmed points, a drill, worked sandstone, and worked chert. The evidence gathered indicates that a dwelling was present which probably represented a Pomona focus house. The chipped stone tool assemblage also suggests that an earlier, Middle Woodland component may have existed at 14MY318. Unfortunately, the site was completely destroyed by borrowing activities during the construction of the dam.

Site 14MY323, the third site excavated during the 1963 field season, lay directly south of and approximately one-fourth of a mile (.4 km) away from 14MY318 (Frantz 1964:2). A 30 foot (9.14 m) square was opened in an area containing a dense daub concentration. This concentration was situated on the center of a low rise, 54 feet (16.46 m) from the edge of the present river channel. A small hearth was discovered 1 foot (30.5 cm) below the ground surface. One pit and a single postmold were also located within .9 m of the hearth. Charcoal and burned earth were abundant in

the mixed earth fill. The artifact assemblage included clay-tempered potsherds, bone sections, two small side-notched projectile points, a leaf-shaped blade and a piece of worked chert.

A second excavation unit was opened directly east of the first unit. This excavation was located on the bank of the river channel and was designed to investigate two concentrations of burned earth which were exposed in the bank of the channel at depths of 2.5 feet (.76 m) and 5 feet (1.52 m) below the ground surface. An area 10 feet (3.05 m) by 12 feet (3.66 m) was excavated to horizontally expose these features. The burned areas were identified as hearths, but no artifacts were located in direct association with them.

A third and final excavation was opened on the river bank approximately 75 feet (22.86 m) north of the second unit. An area 35 feet long (10.67 m) and varying from 5 feet (1.52 m) to 11 feet (3.35 m) in width, due to the curve at the river bank, was excavated. A large concentration of charcoal and daub was located 8.5 feet (2.59 m) below the ground surface. A stemmed point, three scrapers and three blade fragments were located in the north end of this concentration.

The river bank was then profiled between the second and third excavation units. Three small hearth-like concentrations of charcoal and burned earth were located at depths of 11.2 feet (3.41 m), 11.4 feet (3.48 m) and 11.6 feet (3.54 m) below the ground surface. No artifacts were located in direct association with these hearth-like features.

The evidence gathered indicates that site 14MY323 was a multiple component site having a Middle Ceramic, Pomona focus habitation with dwelling remains as well as three buried levels at .75 m, 2.5 m, and 3.5 m below the ground surface. This site was located at the edge of a borrow area and may have been destroyed during the construction of the dam. The locale of 14MY323 is currently inundated by the multi-purpose pool.

The last site excavated during the 1963 field season was 14MY315 (Frantz 1964:3). This site is located on the floodplain of Elk river at the base of Table Mound. Two areas containing concentrations of chert chips, burned limestone and other cultural debris were investigated. The first excavation was 15 feet (4.57 m) east-west and 40 feet (12.19 m) north-south. This unit was excavated to a depth of 1.5 feet (45.7 cm). The mixed soil extended from the ground surface to a depth of 1.3 feet (39.6 cm) fading out gradually below a depth of .9 feet (27.4 cm). At approximately 27 cm below the ground surface, a small basin-shaped

pit containing charcoal and burned earth was identified. The artifacts located in this unit included clay-tempered and sand-tempered pottery sherds, two small stemmed projectile points, two large stemmed points, a small leaf-shaped point, and an end scraper.

The second excavation unit covered an area 12.5 feet (3.81 m) by 20 feet (6.10 m). An irregularly shaped concentration of burned limestone was located at a depth of .6 feet (18.3 cm) below the surface. The recovered artifacts from this unit included four stemmed projectile points, clay-tempered pottery sherds, chert chips and a fresh water mussel shell fragment.

The artifacts recovered from 14MY315 indicate an Early Ceramic occupation with a probable Cuesta phase cultural affiliation. Evidence was also gathered which indicates a later utilization of the area during the Middle Ceramic period. This important site was destroyed by borrowing activity when the dam was being constructed.

This concluded the 1963 excavations in the Elk City reservoir. Occupations from the Archaic, Early Ceramic, and Middle Ceramic periods were investigated by Frantz. Unfortunately, these four sites have been destroyed and therefore are no longer capable of yielding significant archeological data.

Ward Weakly directed excavations at five sites during the 1964 field season, (Weakly 1965). Four of these sites; 14MY305, 14MY309, 14MY316 and 14MY317, had previously been awarded high priority ratings by Witty (1962:23). The fifth site, 14MY335, was exposed in a borrow pit during the construction of the dam.

The first site excavated was 14MY316. This site is located on a low terrace at the confluence of Card creek and the Elk river. The site is surrounded on all but the east side by a meander of the Elk river. Eight 5 foot (1.52 m) squares were opened to investigate areas where concentrations of chert debris, burned limestone and charcoal were exposed on the surface of the site. These units were excavated by using arbitrary .5 feet (15.2 cm) levels unless a specific feature was identified. Four of the units were abandoned when there was no evidence of cultural debris encountered below the plow zone to the underlying clay zone which was 1.5 feet (45.7 cm) to 3.0 feet (91.4 cm) below the ground surface. Two other units yielded hearth areas which were comprised of fragmented pieces of limestone, one of which had been disturbed by plowing. No cultural material below 2.5 feet (76.2 cm) was located in either of these test units.

The remaining two test excavations were enlarged when post molds were encountered below the plow zone. One of these tests located the remains of a house which was approximately 17 ft (5.18 m) square with main roof supports which were oriented in an approximate east-west direction. The structure had probably been of wattle and daub with a gabled roof (Weakly 1965:2). The internal features included a small, shallow pit and three small concentrations of fragmented pieces of stone in the southwest corner of the house. However, no evidence of heavy burning was associated with these concentrations. An exploratory trench located a midden area to the west of the house; however, time did not allow for a complete excavation of this feature.

The remaining test unit in which post molds were encountered lay approximately 50 feet (15.24 m) northwest of the excavated house. These post molds were oriented in an approximate northeast to southwest direction and probably represented the remains of another structure which was quite similar to the one described above.

The results of these investigations indicated that a Hopewell phase component with structural remains was identified at 14MY316. The surface materials also contained diagnostic Cuesta phase and Pomona focus artifacts. A radiocarbon date of A.D. 900 $\pm$ 100 (Witty 1965:10) was determined from a wood charcoal sample recovered from one of the post molds associated with the Hopewell structure. The site lies in the upper limits of the multi-purpose pool and may still contain potential for yielding significant archeological information.

The second site and primary objective of the summer's work was 14MY305, the Infinity site. This is one of the largest and most important sites within the reservoir area. It became the type site of the Cuesta phase (Marshall 1972) and was included individually on the National Register of Historic Places. The site is located approximately one-half mile (.8 km) southwest of 14MY316 and is also situated on a meander of the Elk river. The site is further delimited on the south and west edge by an abandoned oxbow and on the east end by Card creek. A large number of 5 ft (1.52 m) test squares were opened on the site (Weakly 1965:2). All but three of these units were abandoned when there was little or no cultural remains located below the plow zone.

Four areas containing large quantities of burned limestone was located on the surface of the site. These areas were investigated and in all four cases, hearths were located immediately below the plow zone. One other area was investigated

and the remains of a structure was identified. However, the actual floor plan could not be determined due to its having been built in what appeared to be a midden area. This house was probably associated with a Middle Woodland occupation.

The most productive area was at the extreme west end of the site. A large midden area measuring 125 feet (38.1 m) northwest by southeast and 60 feet (18.29 m) east by west was investigated. The artifact assemblage suggested at least three occupation zones. The uppermost level, which consisted of the disturbed plow zone, contained ceramics and stone tools described as resembling the Kansas City focus, Hopewellian phase. Below this level, cord-marked pottery of an undetermined Woodland affiliation was located at a depth of 1.5 feet (45.7 cm) and 2.5 feet (76.2 cm). Below 3.5 feet (1.07 m) a third component was located which contained a large chert knife (Weakly 1965:2).

Later archeological investigations, which resulted in the eventual defining of the Pomona focus (Witty 1967) and the Cuesta phase (Marshall 1972), indicated that the uppermost level at 14MY305 represented a Pomona focus component and the middle level, a Cuesta phase habitation (Marshall 1972:223-225). Four radiocarbon dates have been determined from the site and these are A.D. 780 $\pm$ 80, A.D. 970 $\pm$ 80, A.D. 960 $\pm$ 100, and A.D. 1310 $\pm$ 90 (Marshall 1972:92-93). Site 14MY305 is located within the floodpool of the reservoir and has been taken out of the crop lease by the Kansas Fish and Game Commission.

Site 14MY335 was the third site excavated by Weakly. The site was located during borrowing operations for the construction of the dam. Several 5 foot (1.52 m) and 10 foot (3.05 m) test units were excavated in an area where the borrowing operations had uncovered a large concentration of burned soil. No structural features were located in this area, but eight roughly circular pits and two burials were excavated. The pits contained varying amounts of debitage, projectile points, scrapers, knives, awls, cord-roughened pottery, charcoal, charred seeds, and animal remains. The two burials, one of a child, and the other of an adult, were in a poor state of preservation. Only the torso and part of a lower leg bone of the adult were recovered. The missing portions of the skeleton were probably displaced by the heavy equipment which was operating in the area.

The artifactual remains recovered at 14MY335 were classified by Weakly as belonging to a group of people representing an undetermined Woodland cultural affiliation (Weakly 1965:3). A later reevaluation of the artifact assemblage indicated a Pomona focus habitation. A radiocarbon date of A.D. 1190 $\pm$ 90 was obtained from a wood charcoal sample recovered from one of the pits.

Site 14MY335 was destroyed by the continuing borrowing activity which occurred in the area.

Site 14MY317 was the next site investigated by Weakly. This site was only superficially tested due to the limited amount of time remaining during the 1964 field season. Nine test excavations were opened in areas where evidence of burning and/or artifacts were observed on the surface of the site. Only one of these units yielded a major subsurface feature which consisted of a child interment which was in a very poor state of preservation.

The artifactual assemblage from 14MY317 was identified as a Kansas City focus, Hopewellian phase component (Weakly 1965:3). The site was later reevaluated after Marshall (1972) formulated the Cuesta phase and the recovered material indicated a Cuesta phase rather than a Kansas City focus component. Marshall also identified materials from the Pomona focus which indicated an additional later Middle Ceramic occupation (Marshall 1972:148), 150). The site could still possibly contain significant archeological data; however, its location in the multiple purpose pool causes some doubts about its current state of preservation.

Site 14MY309 was the last site excavated during the 1964 field season (Weakly 1965:3). This site is located approximately one mile (1.6 km) downstream and east of 14MY317. The site is exposed in a cut bank of the Elk river. At least four distinct zones were identified at 14MY309. The uppermost component was a Middle Woodland habitation zone with a second series of three cultural levels exposed in the riverbank which ranged from 7 feet (2.13 m) to 25 feet (7.62 m) in depth. The principle features in these lower zones represented burned areas which were interpreted as being hearths. Unfortunately, no diagnostic artifacts were located in either of these lower zones. A radiocarbon date of 1,730 $\pm$ 180 B.C. was obtained from the lowest zone which was 25 feet (7.62 m) below the ground surface (Witty 1965:10). The site is now within the multi-purpose pool of the reservoir and because of its antiquity would still have potential for yielding significant archeological information. Its deeply buried position does offer some probability of preservation.

The archeological investigations conducted during the 1965 and 1966 field seasons were under the supervision of James Marshall. These investigations consisted of an extensive excavation of site 14MY305, the Infinity site (Marshall 1972). As was previously mentioned, the Infinity site is one of the largest and most important sites in the Elk City lake locality. The Infinity site is the type site from which Marshall taxonomically defined the Cuesta phase (Marshall 1972:225-230).

The Infinity site is located in a 32 acre (12.95 ha) field and the site itself occupies approximately 7 acres (2.83 ha). The site is delimited by the Elk river on the north and west, an abandoned oxbow on the south, and Card creek on the east.

Witty located 14MY305 while conducting the original archeological survey of the reservoir (Witty 1962:5-7). At the time of the survey, Witty realized the potential archeological significance of the site and awarded it an A-1 priority rating. The site was tested by Weakly during the 1964 field season, the results of which have already been presented in this paper. The testing indicated that 14MY305 did contain significant archeological data and that an extensive excavation of the site could supply extremely valuable information concerning the Woodland period of southeastern Kansas.

The first areas of the site to be excavated during the 1965 field season was designated Area 651 (Marshall 1972:16). A road grader was employed to strip away the overburden which consisted primarily of the plow zone. Once this overburden was removed, the actual excavations were completed manually. This same method was also employed during the 1966 field season, the last season spent at the Infinity site. Three additional areas were excavated during this last season: Area 661, Area 662, and a continuation of Area 641, which was originally superficially tested by Weakly.

Area 651 encompassed an area 100 feet (30.48 m) north by south and 295 feet (89.9 m) east by west. The features located in Area 651 included 38 post molds, 9 pits, 2 concentrations of mussel shell, a human interment, and two clusters of burned stone. In addition to these features, 22 clay-tempered, cord-roughened pottery sherds and 29 lithic specimens were located in the general area of 651 while the overburden was being removed. The lithic specimens included four projectile points, two oval blades, four scrapers, a flake knife, 13 projectile point sections and blades, three chert cores, a fragmented section of a sandstone arrowshaft smoother, and a piece of grinding stone (Marshall 1972:22).

The first area investigated during the 1966 field season was Area 661. The area stripped measured 60 feet (18.29 m) east by west and 160 feet (48.77 m) north by south. A total of 38 features were identified in Area 661 and these included 31 post molds, one pit, and six clusters of burned stones. Area 662 was excavated concurrently with Area 661. This excavation measured 100 feet (30.48 m) north by south and 50 feet (15.24 m) east by west. A total of 20 features were located in Area 662. These features

included 16 post molds, 2 pits, and 2 concentrations of burned stone.

The remainder of the 1966 season consisted of expanding Area 641. Eventually, an area measuring 80 feet (24.38 m) east by west and 165 feet (50.29 m) north by south was excavated. A significant number of features were located in Area 641 including 57 post molds, 7 hearths and a midden area. One dog burial and two human interments were excavated from within the midden and two other dog burials were located outside of the northern limits of the midden (Marshall 1972:38).

Stratigraphically, three archeological components were identified at 14MY305 during the 1965 and 1966 field seasons. Component A, the uppermost occupational zone, is represented by the group of eight features identified in Area 651. Component B, the one below the uppermost component, consisted of a village complex comprised of house patterns, a midden, and other associated features. Component B was identified in all four major excavation units at the Infinity site. Component C, the deepest of the three components, consisted of one pit and two post molds. This component was located underlying Component B in Area 662.

The eight features comprising Component A were all located at approximately .6 feet (18.3 cm) below the ground surface. The four pits were labelled A, B, F, and G (Marshall 1972:29-30). Clay-tempered, cord-roughened pottery sherds were recovered from pits A and G. These same type sherds were also located in association with a concentration of mussel shells.

Burial No. 1, the human interment located in Area 651, was identified as belonging to Component A. The skeleton was in a very poor state of preservation and was removed in a plastic jacket. The skeleton was then submitted to the University of Kansas for a detailed analysis. A report of these findings is located in Appendix 1 of Marshall's (1972) report.

Component B was located in each of the four areas investigated by Marshall. House patterns were also identified in each of these areas and at least five houses were defined (Marshall 1972:33-38). All five houses were quite similar in that they were fairly large structures with an oval shape. Associated internal features consisted of post molds, pits and hearths.

The midden area and its associated features were also associated with Component B. This midden consisted of the low mound of dark soil containing a mixture of shell, bone, and other cultural debris. The base of the midden formed an oval pattern

which measured 82 feet (24.99 m) northeast by southwest and 53 feet (16.15 m) southeast by northwest.

Three burials, numbers 4, 5 and 6, were located within the midden (Marshall 1972:40-41). One burial consisted of a dog and the other two represented human infants. Two other burials, numbers 2, and 3, represented dogs and these were located northwest of the midden and adjacent to house 5. All five of these burials were in a very poor state of preservation and no artifacts or burial pits were identified in direct association with them.

The remaining features associated with Component B included 33 postmolds which were identified beneath the midden. These postmolds appeared to form a large oval which was quite similar in outline to the base of the midden. Numerous other postmolds associated with Component B were identified and may represent portions of house patterns which extended beyond the limits of the excavations (Marshall 1972:43). Component B at 14MY305 represents a village site taxonomically defined by Marshall as the Cuesta phase, (Marshall 1972:225-230). The distinctive house type, together with the artifact inventory, which included a distinct pottery type, was the basis for Marshall's formulation of the Cuesta phase.

Component C at 14MY305 was comprised of one pit and two postmolds which were located underlying Component B in Area 662. Component C also contained three contracting stemmed projectile points and 54 chert chips which were located in the pit fill.

Four radiocarbon dates were determined from wood charcoal samples which were extracted from features at 14MY305. The first sample consisted of charcoal recovered from pit A in Component A. Cord-roughened, clay-tempered pottery sherds representing the Pomona focus were located in direct association with this feature. A radiocarbon date of A.D. 1310 $\pm$ 90 was obtained from this sample (Marshall 1972:92). The next two samples were collected from the midden area which was associated with Component B, the Cuesta phase component. Dates of A.D. 780 $\pm$ 80 and A.D. 970 $\pm$ 80 were obtained from these two samples (Marshall 1972:93). A date of A.D. 960 $\pm$ 100 was obtained from a charcoal sample extracted from pit L which was associated with Component C (Marshall 1972:93). This component was originally interpreted as belonging to an earlier complex; however, the date does not indicate this.

PRE-1978 CULTURAL RESOURCE INVENTORY

The cultural resource inventories of the Elk City lake locality prior to the 1978 field season had identified 86 prehistoric archeological sites. Within this section of the report is an inclusive summary presentation of these sites. Five of these sites; 14MY315, 14MY318, 14MY321, 14MY324 and 14MY335 were destroyed during construction activity. However, due to the importance of these sites in relationship to the archeology of the region, they will nevertheless be discussed in this section.

From an archeological viewpoint, the Elk City lake presents a very unique situation. Throughout the years, from the initial survey in 1961 up to the present time, the Society has had the assistance of Ernie Carr, an amateur archeologist who resides in Independence. Carr has been an indispensable aide devoting many hours of his time to the Historical Society. Carr's familiarity with the area has resulted in a very thorough on-going survey throughout the years. Carr worked with the 1963 and 1964 crews and was the foreman during the 1965 and 1966 field seasons. He is a very competent field technician and has monitored several construction projects within the Elk City lake locality to determine their impact, if any, on the cultural resources. Through the years, Carr continued to locate and report sites to the Society. Witty would periodically visit the project area with Carr and record the finds. Carr's efforts made possible an on-going Society inventory in the area, resulting in a fairly complete cultural resource inventory for the Elk City lake locality. Figure 3 consists of a map detailing the areas surveyed throughout the years. This also includes the area surveyed during the 1978 field season.

Because these activities were not part of a formal study, the analysis has been limited. Therefore, the presentation of those sites in this report will be brief. However, the cultural affiliation is presented whenever diagnostic artifacts were recovered. The remaining sites, which were located during the Society's contract work, will receive a detailed presentation.

The system used in assigning numbers to sites in Kansas was developed by the Smithsonian Institution in connection with the River Basin Survey projects. In this system, a three unit symbol is employed, the first being the number representing the state, i.e., Kansas is 14; the second is a two-letter abbreviation representing the county, i.e., Montgomery county is MY; and the third is a three or four digit number representing the specific site itself. The Kansas State Historical Society uses the 300 series or block of numbers when recording a site. Other institutions throughout Kansas are assigned a different block of numbers (Kansas State University 600 series, Wichita State University 500 series, etc.)

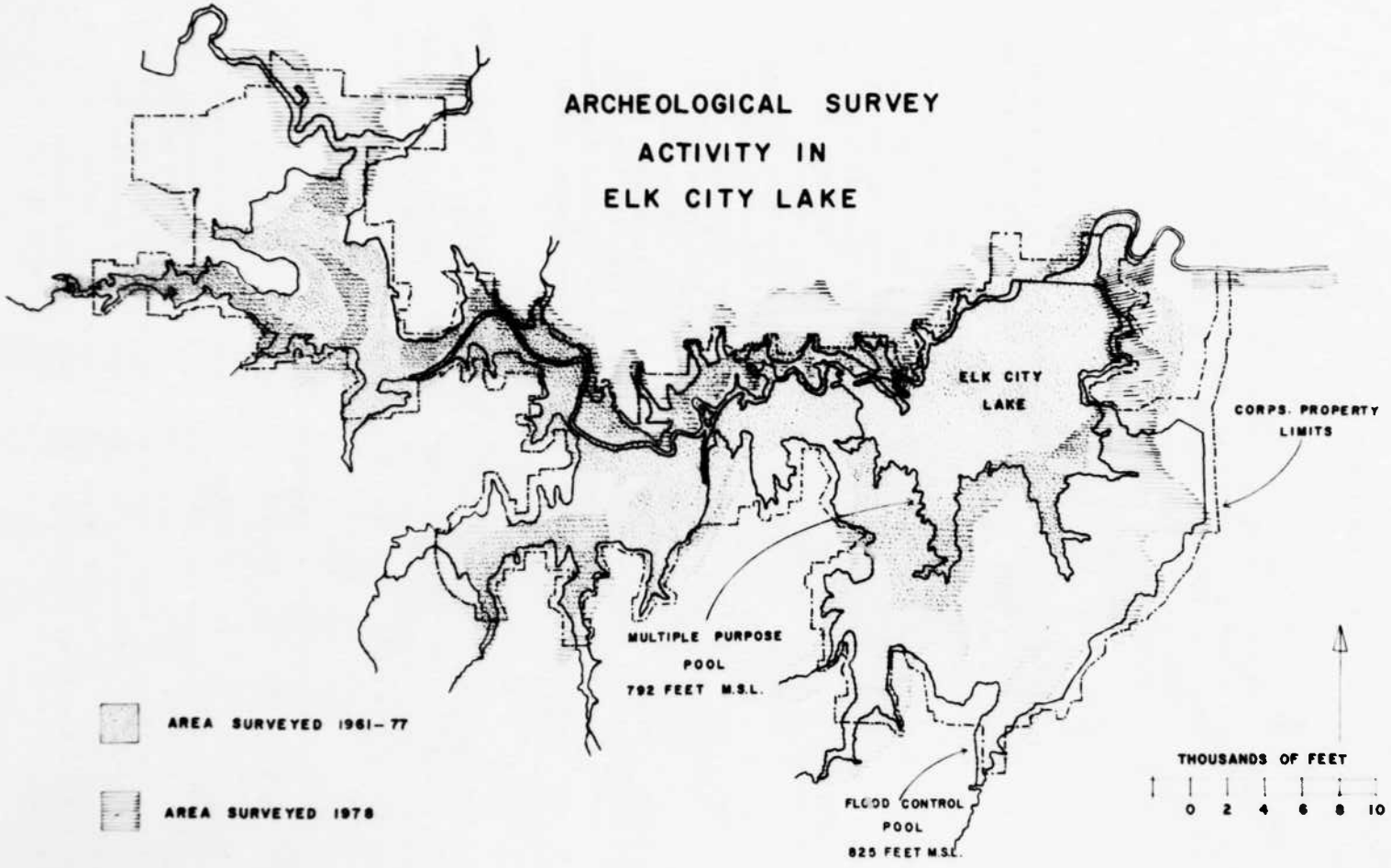

FIGURE 3. Archeological survey activity in Elk City lake.

to assign to its sites. Whenever the last number is utilized in the first hundred, i.e., 14MY399, the next site will be awarded the lowest number in that series plus 1000 (i.e., 14MY1301). This way the institution can always assign numbers within their specific series or block of numbers.

Throughout the nineteen years of the Society's involvement in the Elk City area, numerous other archeological projects were completed in Montgomery county which required the assignment of site numbers. Therefore, seeing as the numbers are normally awarded in numerical order through time, the sites will not be numbered consecutively throughout the inventory of the Elk City lake project. There will be certain gaps between site numbers which means they were assigned to sites in other areas of Montgomery county.

14MY302

This was the first site recorded in the lake area by Witty in 1961 (Witty 1962:4). The site is on the edge of a prominent terrace adjacent to the west or right bank of the Elk river. The site was tested by Jones during the 1978 field season and the specific finding will be presented later in this paper. The recovered diagnostic artifacts located by Jones included a corner-notched projectile point and clay-tempered, cord-roughened pottery sherds indicating either an Early or Middle Ceramic occupation for the site. Site 14MY302 was determined to still bear considerable potential for providing significant archeological data concerning these periods in the Elk City lake locality. The site is located within the flood pool limits of the lake and should be removed from cultivation and preserved for future research.

14MY303

A site located during the initial 1961 survey of the reservoir area (Witty 1962:4-5) which occupies a low terrace top bounded on the east by the Elk river and on the south and southwest by a small unnamed stream channel. The resulting area is a neck of land some three acres (1.2 ha) in size extending southward between these two waterways. The artifacts collected from 14MY303 consisted of two small, well-made triangular projectile points and a section of a side scraper. The projectile points suggest a cultural affiliation with one of the later prehistoric Ceramic groups. The site is within the flood pool limits of the lake and its potential for yielding significant archeological information is presently undetermined. The site should be resurveyed to gather additional diagnostic artifacts. A more precise cultural affiliation could then be obtained.

14MY304

This site was identified during the 1961 survey (Witty 1962:5). The site occupies the top and northwestern edge of an old terrace which lies on the south or right side of the Elk river. To the south, the terrace rises gently to join with the low-rolling hills. A slough runs along the northeastern edge of the terrace and joins with the main river channel. The collected artifacts indicate that 14MY304 has a probable Archaic cultural affiliation. The scarcity of materials and the obvious mechanical terracing of the area indicated that further archeological work would have been fruitless. The site is within the flood pool limits of the lake and no additional investigations are recommended.

14MY305

Site 14MY305, the Infinity site, was located during Witty's 1961 survey (Witty 1962:5-7). The site is located on a large flat terrace top in a 32 acre field which is bordered by Card creek on the east, the Elk river on the north and west and an abandoned oxbow on the south side. This site was tested by Weakly in 1964 and was later excavated by Marshall in 1965 and 1966. The results of these investigations have been previously discussed in this paper. The site has considerable potential of yielding additional significant archeological data and is listed individually on the National Register of Historic Places. The site's location is within the flood pool limits of the lake. The site has been removed from cultivation and is currently being preserved. Continued preservation is recommended at this time.

14MY306

This site was also identified during the 1961 survey on a low terrace a short distance west of the confluence of Chetopa creek and the Elk river (Witty 1962:7). To the south of the Elk river channel, a network of meandering sloughs drain to the east and it is along the east side of these sloughs that a thin scatter of cultural debris was noted. Small sections of shell and pieces of limestone and sandstone were observed along with a few artifacts. Due to the absence of diagnostic artifacts, the cultural affiliation of 14MY306 was undetermined at the time of the survey and the site was recommended for revisit. The site was revisited during March of 1972 when the reservoir was lowered to an elevation of 785 feet. The cultivation zone was completely removed by wave action and/or current activity and the edges of the terrace had begun to erode. The site is within the multi-purpose pool limits of the lake and has probably been destroyed by inundation. However, the site should be revisited if the reservoir is lowered again.

14MY307

Tom Witty located 14MY307 during the 1961 field survey (Witty 1962:8). The site lies on a terrace edge which forms the

right or south side of the Elk river valley. The site is approximately .8 km from the 1961 Elk river channel. The terrace edge stood approximately 10 feet (3.05 m) above the broad flood plain of the Elk river. A slough on the east and a gully to the west left the site standing out slightly from the general terrace edge. The recent floods of 1961 had washed the area bare and left strewn about its base a heavy concentration of small limestone rocks. The cultural material was located within this concentration of materials. The collected artifacts consisted of medium-sized projectile points with parallel sides and expanding stems, a side scraper, a small sandstone slab with one face highly polished, and a blade section. The collected materials indicate a probable Archaic component and testing was recommended (Witty 1962:8). The site was revisited by Witty in 1972 when the reservoir was lowered, but otherwise no further archeological investigations were conducted at this site. The site is within the multi-purpose pool limits of the lake and its potential for archeological significance is still undetermined. Site 14MY307 should be revisited in the event of another lake drawdown.

14MY309

Witty located site 14MY309 while conducting the initial survey of the reservoir (Witty 1962:9). The site is on the edge of a low terrace which is adjacent to the north or left bank of the Elk river. In this section of the reservoir, the Elk river swings quite close to the left or northern edge of the valley, thus leaving a narrow strip of low terraces between the river and the bluffs. At the time of the original discovery, the site ran for approximately 300 m along one of these low terraces. The surface materials consisted scattered pieces of fragmented limestone, flint chips and a few artifacts. The collected artifacts consisted of a small stemmed triangular point with an expanding base, a tip section of a triangular blade and small chunks of weathered burned earth which appeared to be daub. The point type suggested a probable Middle Woodland occupation for the site and testing was recommended (Witty 1962:9). Later, three buried cultural levels ranging from 10 feet (3.1 m) to 20 feet (6.2 m) below the surface were identified in the river bank below the Woodland component (Marshall 1972). Site 14MY309 was tested by Ward Weakly in 1964 and the results of these investigations have previously been discussed in this paper. The site is within the multi-purpose pool of the lake. If the opportunity arises, site 14MY309 should be revisited.

14MY310

This site was identified during the initial survey (Witty 1962:9), and is approximately 35 m north of the left or north bank of the Elk river on two low rises that were formed by a

series of narrow sloughs which run through this area. The site was represented by a thin scatter of lithic debris which covered approximately 1 ha. The recovered artifacts consisted of two large stemmed points with expanding bases, one small plain triangular point, one small end scraper, one blade section, and one cord-roughened, clay-tempered sherd. The diagnostic artifacts suggest either an Early or Middle Ceramic occupation or possibly both. Witty recommended small scale testing for the site (Witty 1962:9), but to date no further investigations have been conducted there. The potential for significant archeological data is undetermined and the site is inundated by the multi-purpose pool of the lake. In the event of a major lake drawdown, 14MY310 should be revisited to determine the effects of inundation.

14MY311

This site was identified during the 1961 survey as being situated on the edge of a meandering slough which runs in a west to east direction across a large bend in the river channel (Witty 1962:10). The site was represented by a thin scatter of burned and unburned sandstone and limestone, pieces of animal bone, chert chips and a few artifacts. The collected artifacts consisted of one large projectile point with a contracting stem and a concave base, one leaf-shaped blade, and a few blade sections. The projectile point suggests a probable Middle Woodland occupation, but due to the scarcity of materials and the badly eroded condition of the site, no further archeological work was recommended (Witty 1962:10). The site is within the multi-purpose pool limits of the lake and would have had a low potential of yielding significant archeological information. However, the site should be revisited in the event of a lake drawdown to gather additional information on the effects of inundation.

14MY312

Recorded during the initial survey, the site was approximately 450 m east of 14MY310 along the north end of the same meandering slough mentioned for 14MY311 (Witty 1962:10). The surface material consisted of a thin scatter of burned limestone rock, pieces of shell, chert chips and flakes and occasional artifacts. The recovered artifacts, which included several large triangular points with expanding stems, blade sections and a bipointed sandstone specimen, suggests a probable Middle Woodland cultural affiliation. Two additional sites are located along this same slough, 14MY311 and 14MY310, and all three may be contemporary. This was the largest of the three sites and Witty recommended that 14MY312 should be tested (Witty 1962:11). To date, no further archeological investigations have been conducted at the site. The potential for archeological significance is undetermined, and the site is within

the limits of the multi-purpose pool of the lake. If the opportunity arises, site 14MY312 should be revisited to determine whether the site contains intact cultural materials.

14MY313

This site was also identified during the 1961 survey (Witty 1962: 11). The site is on a low terrace edge adjacent to a winding slough approximately 100 m north of the river channel. The observable surface material included pieces of broken shell, small bone sections and a few chert chips. At the time of the 1961 survey, the ground conditions were deplorable and no diagnostic artifacts were located. Therefore, Witty recommended additional survey (Witty 1962:23). The site has since been revisited numerous times under more favorable ground conditions and an extremely large number of projectile points, chert knives, drills and other artifacts were located on the east side of the site. The diagnostic artifacts, which also included a few cord-roughened, clay-tempered pottery sherds, suggested an Early Ceramic occupation for the site. Due to the large quantity of recovered artifacts, 14MY313 appeared to bear a high potential of yielding significant archeological information. However, the site is inundated by the multi-purpose pool. In the event of a lake drawdown, 14MY313 should be revisited.

14MY314

Witty located 14MY314 during the original survey of the reservoir (Witty 1962:12). The site is situated on the top of a flat terrace some 10 acres (4 ha) in size. The site occupies an area of approximately 8 acres (3.2 ha) and is a short distance south of the right or south bank of the Elk river. The recovered artifacts suggest a Middle Ceramic cultural affiliation. Witty awarded 14MY314 a fairly high priority rating (Witty 1962:23) and recommended testing on top of the terrace. No additional archeological investigations have thus far been conducted at 14MY314. The site is within the flood pool limits of the lake and is periodically inundated. Site 14MY314 should be tested to determine whether intact cultural remains exist.

14MY315

14MY315 was identified during the Society's 1961 survey in a small field between the west end of Table Mound and the Elk river (Witty 1962:12-13). The field was divided diagonally by a south-east to northwest trending slough and cultural debris was located on both sides of this slough on two slightly raised terrace remnants. The cultural remains consisted of a fairly abundant amount of limestone, sandstone, broken shell and scattered artifacts. The diagnostic artifacts indicated an Early Ceramic, Cuesta phase cultural affiliation. These artifacts included clay-tempered, cord-roughened pottery sherds, some of which were decorated, and large stemmed projectile points. Based on the abundance of surface material and cultural affiliation, Witty recommended an extensive excavation of the site (Witty 1962:23). Site 14MY315 was the last site excavated by Frantz during the 1963 field season, and the

results of these excavations have been previously discussed in this paper. Site 14MY315 was later destroyed by borrowing activity in conjunction with the construction of the dam. Accordingly, no further archeological investigations are necessary.

14MY316

This site was also located during the initial 1961 survey of the reservoir area (Witty 1962:13-14). The site lies in a small triangular shaped field which is on the right or south side of the Elk river. This field is more or less an island, surrounded on two sides by the Elk river and on a third side by a deep, abandoned channel of the river. Witty (1962:23) awarded 14MY316 a high priority rating and recommended an extensive excavation. The site was excavated by Weakly in 1964, the results of which have previously been presented in this paper. The recovered artifacts, which consisted of a large quantity of diagnostic projectile points and pottery sherds, indicates that 14MY316 contains a Hopewell phase component with structural remains present. Additional surface finds also contained diagnostic artifacts from the Cuesta phase and Pomona focus. The site lies in the upper limits of the multi-purpose pool and may still contain potential for yielding significant archeological information. Therefore, preservation is recommended for 14MY316.

14MY317

This site was identified during the 1961 field survey of the reservoir area (Witty 1962:14-15). The site is situated on the west end of a terrace remnant which is located approximately 100 m from the north or left bank of the Elk river. Witty awarded site 14MY317 a high priority rating (Witty 1962:23) and the site was tested by Weakly during the 1964 field season. The results of Weakly's work have been previously discussed in this paper. The recovered artifacts included large triangular points with expanding stems, small triangular points (both plain and side-notched), cord-roughened and smooth clay-tempered pottery sherds, blade section, scrapers and sandstone manos. The diagnostic artifacts indicate a Cuesta phase and a later Middle Ceramic occupation for 14MY317. Upon completion of the dam, the site area was inundated by the multi-purpose pool. The site could still contain significant archeological information. In the event of a lake drawdown, 14MY317 should be revisited to determine the impact of the inundation.

14MY318

A site situated on the south side of an abandoned oxbow which was approximately 70 m west of the left or west bank of the Elk

river. Witty awarded 14MY318 a high priority rating (Witty 1962: 23) and the site was excavated by Frantz in 1963 (Marshall 1972). The evidence gathered by Frantz indicated that 14MY318 contained a Pomona focus component with at least one dwelling present. Frantz also observed numerous structural remains while the area was being stripped for borrow. The chipped stone tool assemblage also suggests that an earlier, Middle Woodland component may have existed at the site. Site 14MY318 was completely destroyed by borrowing activities during the construction of the dam. Therefore, no additional investigations are necessary.

14MY319

This site was identified during the 1961 reservoir survey (Witty 1962:15-16) as being on the edge of a prominent terrace system which trends east to west adjacent to Card creek. The recovered cultural remains included a few pieces of sandstone and one large undiagnostic plain triangular-shaped blade. Witty recommended additional survey under more favorable ground conditions (Witty 1962:16). The site was revisited by Carr and he recovered a few Cuesta phase pottery sherds, two large triangular expanding stem projectile points and other miscellaneous tools. The site is at the edge of the multiple purpose pool level of the lake and the archeological potential is currently undetermined. The site should be revisited in the event of a lake drawdown.

14MY320

Located during the initial survey of the reservoir, the site is on a low terrace which is a short distance west of the confluence of Squaw creek and the Elk river (Witty 1962:16). The site is further delimited on the west edge by an abandoned channel of the Elk river. The evidence gathered during the survey indicated that 14MY320 contained a Pomona focus component with dwelling remains present and an additional, earlier utilization of the area. Witty awarded the site a high priority rating (Witty 1962:24) and recommended an extensive excavation. The site was revisited and a sizable number of large stemmed projectile points and Cuesta ware ceramics were collected along with numerous other tools. The site is within the multi-purpose pool of the lake and undoubtedly has suffered alteration from inundation. If 14MY320 still exists, it would bear potential for yielding significant archeological data. The site should be revisited if the opportunity arises to determine if intact cultural remains are present.

14MY321

This site was identified during the original reservoir survey (Witty 1962:16-18). The site was at the northwest edge of Table

Mound, a location directly under the dam axis. Witty awarded 14MY321 a high priority rating (Witty 1962:24) and the site was excavated by Frantz in 1963 (Marshall 1972). The recovered artifacts consisted of large and medium-sized triangular points with expanding or contracting stems, a small plain triangular point, and numerous cord-roughened, clay-tempered pottery sherds. The results of Frantz's investigations have previously been discussed in this paper and indicate that 14MY321 was a multiple component site consisting of Cuesta phase and Pomona focus components. Due to the site's position at the then proposed dam axis, the site area was completely destroyed by construction activity, and therefore no longer has potential for archeological significance. Accordingly, no additional investigations are necessary.

14MY322

A site identified by Witty in 1962 as being approximately 100 m south of the right or south bank of the Elk river on the top and slope of a low terrace remnant. The recovered artifacts included shell fragments, potsherds, pieces of bone and a large number of projectile points. The diagnostic materials indicate that 14MY322 has a Middle Woodland component present. Witty also located one ash-filled storage pit while revisiting the site in 1964. The site is in the multi-purpose pool of the reservoir and has been inundated since the flooding of the lake. If the site is still in existence, it would probably have only a slight potential of yielding significant archeological data (Miller 1973:5). However, it should be revisited if a lake drawdown occurs.

14MY323

Witty recorded this site in 1962 while conducting additional survey work in the reservoir area. The site consisted of a small concentration of grass-impressed daub exposed in a cultivated field on the top of a low terrace adjacent to the left or west bank of the Elk river. A level of charcoal and evidence of burning was also exposed in the river bank just north of the daub concentration. Frantz excavated this site during the 1963 field season (Marshall 1972). The recovered artifacts, part of which consisted of a large quantity of Pomona ware ceramics, indicated that 14MY323 was a multiple component site, containing a Pomona focus habitation with dwelling remains as well as the three buried cultural zones at .76 m, 1.5 m and 2.74 m below the ground surface. As was previously mentioned, 14MY323 was either included in or is at the edge of a borrow area that was utilized during the construction of the dam. If 14MY323 still exists, the deeper zones could contain significant archeological data. If the opportunity arises, the site should be revisited.

14MY324

This site was recorded by Tom Witty in November 1964. The site was identified after borrowing operations for the dam had begun and was reportedly on a low ridge with little or no surface material visible. Only limited testing and sampling could be completed in the short time available to archeologists before the construction machinery totally destroyed the site. The evidence indicated that 14MY324 was a moderately extensive village area with the remains of dwellings, hearths and pits probably associated with Pomona focus habitations. The collected artifacts consisted of a large quantity of clay-tempered, cord-roughened pottery sherds and other miscellaneous tools. The site appeared to have outstanding potential for archeological significance, but was totally destroyed during construction activity. The locale of the site is in the multi-purpose pool limits of the reservoir. No additional investigations are necessary at 14MY324.

14MY325

This site was originally reported to the Society by Ernest Carr as being on a point of land at the confluence of Card creek and an intermittent south bank tributary. Bruce Jones tested the site in 1978, the results of which will be discussed later in this paper. The recovered specimens included a large quantity of sandstone, a few triangular points with either contracting or expanding stems, bone fragments, three clay-tempered, cord-roughened pottery sherds and other miscellaneous tools. The site probably represents a Middle Woodland habitation and more extensive testing is necessary to determine the archeological significance of the site. The site is in the area of the maximum flood pool level of the lake. Additional testing is recommended to determine the significance of 14MY325.

14MY326

A site recorded by Witty during the latter part of 1964 consisting of a dark band of mixed soil exposed in the north bank of the Elk river. Within the mixed soil were abundant amounts of grass-impressed daub and charcoal. This feature was approximately 9 m long and was .6 m to 1.1 m below the lip of the bank. The recovered diagnostic artifacts consisted of two triangular points with expanding stems and a few Cuesta phase pottery sherds, indicating an Early Ceramic occupation for the site. The site is within the multi-purpose pool of the reservoir and, if not extensively altered by inundation, may possibly contain significant archeological data. In the event of a lake drawdown, 14MY326 should be revisited.

14MY327

This site was located by Ernie Carr in 1965 and is on the top and slope of a low terrace adjacent to the east or right bank of the Elk river. The site is further delimited by a slough or old river channel on its south side. The diagnostic artifacts, which included both contracting and expanding stemmed projectile points and cord-roughened, clay-tempered pottery sherds, indicate a Middle Woodland occupation for the site. The area was later inundated by the multi-purpose pool of the lake. Witty and Carr revisited the site in 1972 when the lake level was lowered. The plow zone had been completely removed from the site leaving only a sparse amount of in situ burned sandstone and limestone fragments. The site was once again inundated by the lake, but it appeared that the wave and/or current activity had obliterated a significant portion of the site. Therefore, its potential for yielding significant archeological information is extremely low. However, the site should be revisited if the opportunity arises to determine the effects of inundation.

14MY328

A site reported to the Society in 1965 by Ernie Carr as being adjacent to Card creek. This locale is a short distance south of the Infinity site and may represent an extension of that site. Early indications are that 14MY328 is small and probably does not have much potential for archeological significance. One medium sized triangular point with an expanding stem was recovered which indicates a probable Middle Woodland occupation for 14MY328. The site is within the maximum flood pool limits of the lake. Additional survey work is recommended to obtain a larger artifact sample.

14MY329

This site was recorded by Carr in 1964 as being an earth covered stone mound which is approximately 5.5 m in diameter and 46 cm high. The mound is a short distance west of the left or west bank of the Elk river. No diagnostic artifacts were recovered and the cultural affiliation of 14MY329 is currently undetermined. This site is in the maximum flood pool and may possibly contain significant archeological remains. Testing is recommended to determine the composition of the mound.

14MY334

This site was reported by Carr as being atop a low terrace which lies in a large bend of the Elk river. The site is further delimited by a slough and a high bluff on the west edge and this

entire area is part of the Oak Ridge camping facility. The recovered artifacts consisted of medium-sized triangular points with expanding and contracting stems and cord-roughened and plain, clay-tempered ceramics. Jones tested 14MY334 in 1978 and the results of his investigations indicate a buried Cuesta phase component. The site is capable of yielding significant archeological information and is currently protected by a fairly thick deposit of soil. Continued preservation of 14MY334 is recommended at this time.

14MY335

This site was exposed during borrowing activity connected with the construction of the dam and was adjacent to the east bank of the Elk river at the northwest edge of Table Mound. Weakly excavated surviving portions of the site in 1964, the results of which indicated a Pomona focus component (Marshall 1972). A radiocarbon date of A.D. 1190 $\pm$ 90 was determined from a wood charcoal sample obtained from one of the pits. Site 14MY334 was completely destroyed during borrowing activity. Accordingly, no additional archeological investigations are necessary.

14MY336

This site was reported to the Society in 1972 by Ernie Carr as being at the base of a high hill which lies on the flood plain of Coon creek. The site consisted of an exposure of burned and unburned limestone and sandstone fragments in a 45 cm thick mixed soil zone which was from .6 m to .9 m below the lip of the creek bank. No diagnostic artifacts were located and the cultural affiliation is undetermined. The site is within the maximum flood pool level of the lake and the potential for archeological significance is undetermined. Testing is recommended to determine whether significant archeological data is present at 14MY336.

14MY341

A site was recorded in 1972 on the southern tip of a terrace remnant at the edge of the multi-purpose pool. The wave activity had exposed a large quantity of burned limestone and sandstone along with a sparse quantity of other cultural material. The artifact assemblage, which includes medium-sized projectile points with expanding stems, indicates that 14MY341 contained a Middle Woodland component. Jones tested this site in 1978 and the cultural zone appears to be eroded away. Thus, the area no longer bears potential of yielding significant archeological data. Accordingly, no additional archeological investigations are recommended.

14MY342

This site was reported to the Society in 1972 by Ernie Carr as being on the north edge of a high terrace which is adjacent to the right or south bank of the Elk river. The recovered artifacts, which consisted of medium to large triangular points with contracting and expanding stems, clay-tempered pottery sherds and numerous other tools, suggested the presence of an Early or Middle Ceramic component. Additionally, a few of the recovered projectile points had evidence of basal grinding which is an Archaic trait. Jones tested the site in 1978 and the results of his investigations indicate an Early or Middle Ceramic occupation for 14MY342. The site appears to bear a high potential for yielding data significant to current archeological problems, i.e., burned rock complexes. The site is within the flood pool limits of the reservoir and should be removed from cultivation. The locale of 14MY342 could then be sown to grass and soil stabilization would be established.

14MY344

The site was recorded by the Society in 1972 and is on a low terrace remnant adjacent to the right or east bank of Salt creek. The artifactual remains consisted of medium sized triangular points with contracting and expanding stems which suggests a probable Middle Woodland cultural affiliation. However, the site appears to bear a low potential of yielding significant archeological evidence and has not received any formal archeological testing to date. Site 14MY344 is in the area of the maximum flood pool level of the lake and no additional investigations are recommended at this time.

14MY346

Carr reported this site to the Society in 1972 as being on a terrace top adjacent to the left or west side of the outlet channel for the Elk City lake. The recovered diagnostic materials consisted of medium sized triangular points with contracting stems and large triangular points with expanding stems. These materials suggest a Middle Woodland occupation and the potential for archeological significance is undetermined. No additional archeological investigations have been conducted at 14MY346. Accordingly, the site should be tested to determine whether intact cultural remains are present.

14MY347

This site was recorded in March of 1972 when the lake level was lowered and being situated on a low terrace adjacent to the left or north side of the Elk river channel. This same terrace was examined by Witty during the initial survey, but no exposed

cultural material was noted. However, since the area was inundated by the multiple purpose pool, wave and/or current activity has removed an undetermined amount of soil and exposed the previously buried site. The recovered artifacts, consisting of expanding and contracting stemmed triangular projectile points, suggest that 14MY347 is a Middle Woodland habitation site. The site had potential for yielding significant information concerning the Middle Woodland period; however, it was reinundated and will ultimately be destroyed by current activity. In the event of a lake drawdown, 14MY347 should be revisited.

14MY349

This site was reported to the Society in 1972 and was examined during the major lake drawdown. It occupied a terrace top adjacent to the right or south bank of the Elk river channel. During the initial survey, no material was located in this specific vicinity. However, the inundation by the multi-purpose pool had exposed the site. The recovered artifacts identified the site as belonging to the Middle Woodland, Cuesta phase and demonstrated a definite relationship with the Infinity site. As exposed in 1972, the site had a great deal of archeological potential. Unfortunately, the subsequent inundation by the fluctuating lake level probably has destroyed that potential. However, 14MY349 should be revisited if the opportunity arises.

14MY350

Another of the sites to be recorded in 1972 when the lake level was lowered, this area too had yielded no evidence of cultural remains prior to the flooding of the reservoir. The site is on a terrace remnant at the confluence of the Elk river and Squaw creek. The recovered projectile points indicated that an Archaic component was present. In 1978, Jones tested a concentration of burned sandstone which had been exposed by wave action. The tests indicated that the major portion of the site had been destroyed by the subsequent erosion. Jones concluded that 14MY350 would not yield any significant archeological data. The site is in the area of the multi-purpose pool level of the lake and should be revisited if the opportunity arises.

14MY351

This site was identified in 1972 when the lake level was lowered on a terrace edge adjacent to the west bank of Chetopa creek. The collected diagnostic artifacts consisted of contracting and expanding stemmed triangular projectile points which appear to represent a Middle Woodland cultural affiliation. The site is described as small in size and the potential for archeological significance is not

determined. The site is within the vicinity of the multi-purpose limits of the lake. In the event of a major lake drawdown, 14MY351 should be revisited to determine the effects of inundation.

14MY352

This was another site that was not apparent during the initial survey. When the lake level was lowered in 1972, 14MY352 was recorded as being on the top and edges of a low terrace adjacent to the right or west side of the Elk river and further delimited by a small unnamed tributary to the south. The principal exposed features consisted of two circular areas approximately 6 meters in diameter which contained numerous fragments of burned limestone and sandstone, intermixed with pieces of grass-impressed daub. The two features were tested with an Oakfield sampling tool, and the cores indicated a mixed soil zone extending to a depth of 45 cm below ground surface. These two features probably represent lodges of a ceramic period cultural affiliation. One clay-tempered, cord-roughened pottery sherd and two triangular projectile points with expanding stems were also recovered. This site contained significant archeological data, but has since been inundated by the lake. Its current state of preservation is unknown. In the event of a lake drawdown, 14MY352 should be investigated.

14MY354

This was another site that was reported in 1972 by Carr as being situated on the edge of a terrace a short distance west of the left or west bank of Squaw creek. The recovered materials, which inclued two small, plain triangular projectile points, indicate a probable Middle Ceramic cultural affiliation. The potential for archeological significance is undetermined at the present time and the site lies within the flood pool limits of the lake. Testing is recommended to determine whether intact cultural remains are present.

14MY355

This area was inspected during the initial survey, but the cultural remains were too sparse for a specific site to be designated. Since that time, periodic revisiting of the area has recovered enough material to justify the recording of the site. The site is on a sloping hillside extending down from a low bluff to the edge of the right or east bank of the Elk river. The diagnostic artifacts include medium sized triangular projectile points with parallel sides and expanding stems and one clay-tempered, cord-roughened pottery sherd. The cultural affiliation appears to be Middle Woodland, but the site has been determined to have a

relatively low potential of yielding significant archeological information. The site is within the flood pool limits of the lake and no additional archeological investigations are recommended.

14MY356

A site was recorded in August, 1972, as being on a low terrace adjacent to the left or north bank of the Elk river. The diagnostic remains consisted of small, plain triangular points and small to large triangular points with expanding stems which probably represent one of the Ceramic period manifestations in this area. The size and relatively sparse amount of cultural remains indicate a low potential of archeological significance. Site 14MY356 is within the maximum flood pool limits of the lake. No additional archeological investigations are recommended for 14MY356 at this time.

14MY357

Another site was recorded in August, 1972, as being situated on a prominent terrace that trends in a northwest to southeast direction adjacent to the south or right bank of the Elk river. Very little cultural material was recovered from the site except for one medium-sized projectile point which indicates a probable Middle Woodland occupation. No additional archeological investigations have been conducted at 14MY357 and its potential for archeological significance is still undetermined. The site is within the maximum flood pool limits of the lake. Additional survey work is necessary to obtain a larger artifact sample.

14MY358

This site was also recorded in August, 1972. It is on a low terrace adjacent to the north or left bank of the Elk river. The recovered artifactual materials included one small and one large triangular projectile point with contracting stems which indicates a Middle Woodland cultural affiliation. The horizontal extent of the site appears quite small and the recovered cultural materials were sparse; therefore, the site probably has little potential for archeological significance. The site is within the flood pool limits of the lake. No additional investigations are recommended at this time.

14MY359

A site situated on a wide rolling terrace which is delimited by Salt creek on the south and east and an abandoned channel on the north and west. Ernie Carr reported the site to the Society

in 1973. The large amounts of grass-impressed daub and clay-tempered, cord-roughened pottery sherds indicate a Middle Ceramic, Pomona focus habitation with possible structural remains. The site appears to bear a high potential for yielding significant archeological data concerning this time period. The site is within the maximum flood pool limits of the reservoir. Testing is recommended to determine whether intact cultural remains are present.

14MY360

The site is on a low terrace bordered by Salt creek on the south and a timbered slough on the north. There is an abandoned stream scar which bisects the site in a southwest to east direction and the main portion of the site appears to lie on the north side of the scar. Carr reported the site to the Society in 1973 and its cultural affiliation and potential for archeological significance is undetermined. The site is within the maximum flood pool limits of the lake. Additional survey work is necessary to obtain a larger artifact sample.

14MY362

This site was recorded by Witty in 1974 as being at the confluence of Racket creek and the Elk river. A large number of artifacts were recovered including medium to large sized triangular points with contracting or expanding stems which indicate a probable Middle Woodland occupation. The site is adjacent to the left bank of the Elk City dam outlet and its potential for archeological significance is currently undetermined. Testing is recommended to determine the site's potential for yielding significant archeological information.

14MY366

Carr reported this site in 1974 as being on a terrace system adjacent to the south side of the Salt creek channel. The recovered artifacts included plain triangular points, one triangular point with side notches and a few triangular points with parallel sides and expanding stems. Also recovered were two dart point fragments with evidence of basal grinding. Site 14MY366 suggests the presence of possibly three components: Archaic, Early and Middle Ceramic. The site is approximately one meter above the maximum flood pool and its potential for archeological significance is undetermined at the present time. Due to its location being above the maximum flood pool. preservation is recommended for 14MY366. The site is currently in crop lease and should be removed from cultivation and sown to grass.

14MY367

Carr reported this site in July, 1974 as being on the toe of a north-south trending terrace adjacent to the left or north bank on a sharp bend in Salt creek. The recovered specimens suggest an Early Ceramic occupation, but the archeological potential of the site is undetermined at the present time. The elevation of 14MY367 is approximately 1.5 meters above the maximum flood pool level of the lake. The site should be removed from cultivation and sown to grass. Stabilization and preservation could then be obtained.

14MY368

This is yet another site reported to the Society by Ernie Carr. The site is on a high terrace adjacent to the left or east bank of the Elk river. The recovered artifacts, which included one small triangular point with an expanding stem and one medium triangular point with an expanding stem and concave base, suggests a possible Middle Woodland occupation for the site. The potential for archeological significance of 14MY368 is undetermined and it lies within the maximum flood pool limits of the lake. The site should be tested to determine its potential for yielding significant archeological information.

14MY369

Ernie Carr reported this site to the survey in the fall of 1974 as being on top of a high terrace overlooking the Elk river to the west. One corner-notched dart point base was recovered which suggests a Middle Woodland cultural affiliation. The site is in pasture and Carr reported that the area has never been plowed. Therefore, the site may contain intact cultural remains that are capable of yielding significant archeological data. The site is within the upper limits of the maximum flood pool level. Preservation is recommended for this site.

14MY370

A site was identified by Carr in 1974 on the top of a fairly low terrace remnant adjacent to the east or left bank of the Elk river. The recovered artifacts included both medium and large triangular points with expanding stems and one small plain triangular point which indicates a probable Middle Woodland cultural affiliation. The site is within the maximum flood pool limits of the lake and its potential for archeological significance is currently undetermined. Accordingly, 14MY370 should be tested to determine whether intact cultural remains are present.

14MY371

Recorded in 1974, this site is on a low terrace adjacent to the north or left bank of the Elk river. At the time of the recording, the field in which the site lay had been planted in fescue grass and was being utilized as a pasture. Due to the ground cover, only a sparse amount of cultural material was located. Therefore, the cultural identification and the potential archeological significance of the site was not determined. The site is within the maximum flood pool limits of the lake. Additional survey work is needed to obtain a larger artifact sample.

14MY375

Reported to the Society in 1975 by Ernie Carr, site 14MY375 is on a low terrace remnant which runs in a north to south direction along the right or west bank of the Elk river. The recovered diagnostic artifacts included one base section and one complete specimen of large triangular points with expanding stems and convex bases which indicate a Middle Woodland cultural affiliation. The site is within the upper limits of the maximum flood pool level of the lake and its archeological significance is currently undetermined. Testing is necessary to determine whether 14MY375 contains an in situ cultural stratum.

14MY376

Ernie Carr located and recorded this relatively small site in June, 1975 as being on a very low northwest to southeast trending terrace adjacent to the right or south bank of the Elk river. No diagnostic artifacts were located; therefore, the cultural affiliation and potential significance are undetermined. The site is within the flood pool limits of the lake. The site should receive additional survey work in order to obtain a larger artifact sample.

14MY377

This site was recorded by Carr during the summer of 1975, and is on a low rise a short distance east of the Elk river. One small, clay-tempered pottery sherd was located which suggests a cultural affiliation with either an Early or Middle Ceramic group. The potential archeological significance of 14MY377 is currently undetermined and it lies within the flood pool limits of the lake. Additional survey activity is recommended for 14MY377 to recover a larger artifact sample.

14MY378

This site is a rock shelter reported by Carr in 1975 as being at the base of a low limestone bluff. Jones tested 14MY378 and identified a buried prehistoric zone. The archeological potential is very significant due to the intact cultural stratum and also the excellent preservation of faunal material. The site is within the flood pool limits of the lake and is periodically inundated. The results of Jones's 1978 excavations will be presented later in this paper. This is one of the smaller rock shelters in the Elk City lake locality and does not contain an abundant amount of roof fall. It is capable of yielding valuable information concerning the subsistence base of the late Middle Woodland/early Middle Ceramic groups. Therefore, excavation is recommended to recover this information.

14MY379

This site was recorded by Carr in 1975 as being on a low terrace a short distance from the left or east bank of the Elk river. The site is also a short distance north of 14MY358 and south of 14MY378. The survey failed to locate any diagnostic artifacts; therefore, the cultural affiliation and potential significance is undetermined at the present time. The river is currently eroding the western edge of the site. The site is within the flood pool limits of the lake. Additional survey work is recommended in order to obtain an artifact sample.

14MY395

Ernie Carr recorded this site in 1975 as being on the east end of a long terrace system which runs adjacent to the north or left bank of the Elk river. This locale is also a short distance west of the mouth of an unnamed tributary of the river. The recovered artifacts included one small and one large triangular point with expanding stems and indicate that a potential for archeological significance is undetermined and it lies within the maximum flood pool limits of the lake. Additional survey work is necessary for the purpose of recovering a larger sample.

14MY397

This site was reported to the survey in 1976. The site is on the top of a terrace which is adjacent to the south or right bank of Salt creek and is delimited by sloughs and on the east and north sides of the site. Due to the lack of diagnostic artifacts, the cultural affiliation and potential significance is undetermined. The site is in the area of the maximum flood pool limits of the lake. In order to obtain an artifact sample, additional survey work is recommended.

14MY398

A site was reported by Carr in 1976 as being on the top of a low terrace adjacent to the left or north bank of the Elk river. The site is further delimited by sloughs to the north and east of the site. The cultural affiliation and potential significance is undetermined due to the lack of diagnostic cultural remains. The site is within the flood pool limits of the lake. Additional survey activity is recommended to gather an artifact sample.

14MY399

This site was reported to the Society by Carr in 1976. It is atop a terrace remnant adjacent to the south or right bank of the Elk river. This site was not identified during the original survey, but it was later exposed due to the wave action of the lake. The cultural affiliation and potential for archeological significance is currently unknown. This site, which is within the multi-purpose pool limits of the lake, has and will be subjected to severe erosion from the wave action. In the event of a lake drawdown, 14MY399 should be investigated.

14MY1305

Recorded in 1976, the site is on the slope of a high terrace which runs adjacent to the right or south bank of the Elk river. One large corner-notched projectile point was located and suggests a probable Middle Woodland occupation. 14MY1305 is within the flood pool limits of the lake and its potential for archeological significance remains undetermined. A larger sample is necessary; therefore, additional survey work is recommended at this time.

14MY1306

Carr reported this site to the survey in 1976. The site consists of an exposure of cultural debris in the north bank of Salt creek, approximately 1.5 meters below the lip of the creek bank. Originally, there was a hearth area exposed in the creek bank, but the feature has since been eroded away. The one recovered artifact consists of a medium-sized dart point with evidence of basal grinding suggesting an Archaic occupation for the site. The locale of the site is within the flood pool limits of the lake and at the time of the recording, the site was in an undisturbed natural state, with the exception of some recent erosion. Its potential for archeological significnace has not been tested, but the buried situation suggests that potential may be present. Accordingly, 14MY1306 should be tested to determine its potential for yielding significant archeological information.

14MY1307

This site was reported to the Society in 1978 as being on a low terrace which borders the east or left side of Salt creek. Due to the lack of diagnostic artifacts, the cultural affiliation of 14MY1307 and its potential for yielding significant archeological data is undetermined. The site is within the flood pool limits of the lake and additional survey activity is necessary to gather an adequate artifact sample.

14MY1310

A rock shelter site was reported in 1975 which lies in the eastern side of a large limestone outcrop a short distance from the left or north bank of the Elk river. The shelter is approximately 16 m long (north by south) and extends back 3.5 meters under an overhang. It was tested by Jones in 1978 and the results of these investigations will be presented later in this paper. The site is within the upper limits of the flood pool level of the lake and still contains significant archeological data. There was no erosion taking place during the 1978 investigations and the site appears to be protected by roof fall. Therefore, continued preservation is recommended for 14MY1310.

14MY1321

This site was reported by Carr in 1977 as being on top of a low terrace at the base of a limestone bluff immediately adjacent to the left or east bank of the Elk river. The cultural affiliation and its potential for archeological significance is undetermined at the present time due to the lack of identifiable artifacts. The site is within the flood pool limits of the lake. Additional survey work is recommended for this site.

14MY1322

Carr reported this site to the Society in January, 1977. The site is on a narrow neck of land between the west or left bank of the Elk river and a low limestone bluff lying to the northwest. The site consists of two concentrations of cultural debris bisected by a north to south trending slough. The one recovered artifact consisted of a large triangular point with parallel sides and an expanding stem, indicating a probable Middle Woodland cultural affiliation. The site is within the flood pool limits of the lake and its potential for archeological significance is undetermined. Additional survey work is needed to obtain a larger artifact sample.

14MY1323

This site was recorded in 1977 as a small mound which is adjacent to the south or right bank of Salt creek. The mound measures 2 meters in diameter and is approximately 1 meter high. The composition of the mound has not been sampled and its cultural and/or archeological significance, if any, is unconfirmed. The mound is within the flood pool limits of the lake and should be tested to determine its composition.

14MY1324

This site was identified by Carr while a new channel was being excavated for the Elk river in the vicinity of the dam. In this area, a low terrace runs adjacent to the left or west bank of the Elk river. The site consisted of an exposure or lens of cultural trash including bird bone fragments, animal bone fragments, chert flakes, burned clay, charcoal, burned limestone and sandstone and what appeared to be a hearth area. This lens was 1.5 m below the ground surface and extended for 106 m along the south side of the new channel. No diagnostic artifacts were recovered; therefore, the cultural affiliation and archeological significance are undetermined. The site is inundated by the lake and, in the event of a lake drawdown, should be revisited.

14MY1325

Carr recorded this site in 1977. The site was found atop a high terrace near the confluence of a small feeder stream and the Elk river. The site is further delimited by a high limestone bluff to the north and a small unnamed stream on the west and south sides. The cultural affiliation and potential for yielding significant archeological data is undetermined. The site is within the flood pool limits of the reservoir. Due to the lack of diagnostic cultural remains, additional survey work is recommended for 14MY1325.

14MY1326

This site was recorded by Carr in 1977. The site is atop a high terrace along the left bank of the Elk river, delimited by an old oxbow to the south and west, a high limestone bluff to the northwest and the Elk river to the southeast. Carr recovered small triangular projectile points with side notches and a few cord-roughened, clay-tempered pottery sherds which indicate a Middle Ceramic occupation. The site is within the flood pool limits of the lake and its potential for archeological significance is presently undetermined. Accordingly, testing is recommended to determine if intact cultural remains exist at 14MY1326.

14MY1327

At the time of the recording in 1977 by Ernie Carr, this site was exposed in a vehicle trail which is in the Chetopa creek arm of the reservoir. The trail had caused considerable damage to the site and exposed a hearth complex in one of the ruts. Two large fragments of fired clay daub were recovered which indicates the possibility of structural remains. The cultural affiliation and potential for archeological significance is presently undetermined. The site lies within the flood pool limits of the lake. Additional survey work is recommended with the intention of obtaining an artifact sample.

14MY1333

This site was officially reported in 1978. The site itself was observed by Carr in the southeast corner of a borrow pit during the original dam construction. It is by the Elk river in the vicinity of Table Mound. The site was recorded as a dark lens of mixed humic soil which was approximately 4.8 meters below the existing ground surface. This lens was 12 meters long and approximately 20 to 25 cm thick. The extreme depth of the site may suggest a possible Archaic cultural affiliation. The site is presently inundated by the multi-purpose pool of the lake and its potential for archeological significance is undetermined. In the event of a major lake drawdown, 14MY1333 should be revisited.

14MY1334

Reported to the Society in 1978 by Carr, the site is adjacent to the east or right bank of the Elk river in the area where the river runs extremely close to Table Mound. The site is exposed in the cut bank of an old road. Carr revisited the site during the 1978 survey and located one small plain triangular projectile point which indicates a cultural affiliation with one of the ceramic groups in the area. The site is at the edge of the multi-purpose pool and its potential for archeological significance is undetermined. Additional survey work is recommended to collect a larger sample.

14MY1335

This site was reported by Carr in 1978 along the right or south bank of Chetopa creek at its confluence with the Elk river. No diagnostic artifacts were recovered and the cultural affiliation and potential for archeological significance is still undetermined. The site lies within the upper limits of the multi-purpose pool of the lake. If a major lake drawdown occurs, 14MY1335 should be revisited.

14MY1336

Carr reported this site in 1978 as being on a low terrace remnant next to an old abandoned oxbow of the river. The site is a short distance north of the present left or north bank of the Elk river channel and south of a prominent limestone bluff. Due to the lack of diagnostic materials, the cultural affiliation and its potential for yielding significant archeological data is undetermined. The site is within the multi-purpose pool limits of the lake and should be revisited in the event of a lake drawdown.

14MY1337

A site recorded in 1978 on a low terrace which is between the west bank of Card creek and the right or south bank of the Elk river, a short distance south of the confluence of these two streams. The site is extremely close to the Infinity site, 14MY305, and the recovered material suggests a relationship with the Cuesta phase component at that site. Its potential for archeological significance is specifically undetermined. The site is within the flood pool limits of the lake. Testing is recommended to determine whether intact cultural remains exist at 14MY1337.

14MY1338

This site was reported to the Society in 1978 by Carr as being on a low stream terrace which lies in a sharp bend of Card creek. The potential for archeological significance and the cultural affiliation of the site has not been determined. The site is within the flood pool limits of the lake. In order to obtain an artifact sample, additional survey activity is recommended.

14MY1339

Reported by Carr in 1978, the site is on a terrace adjacent to the north or left bank of Card creek. The site is bisected by a slough which runs in a north by south direction eventually draining into the north side of Card creek. No diagnostic artifacts were located; however, there was a small quantity of daub located which suggests the presence of structural remains. The cultural affiliation and potential for yielding significant archeological information is undetermined. The site is within the flood pool limits of the lake. Additional survey work is recommended for 14MY1339.

14MY1340

This site was reported by Carr to the Society in 1978 as being exposed in a road cut atop a high bank which is adjacent to the right or south bank of the Elk river. This locale is near the confluence of Salt creek and the Elk river. The cultural affiliation and potential for archeological significance is presently undetermined. The site is within the upper limits of the maximum flood pool elevation of the lake. Additional survey work is necessary in order to collect an artifact sample.

14MY1341

Carr reported this site in 1978. It consists of an exposure of cultural debris located in the east or right bank of the Elk river. This exposure is thin and approximately 2.5 meters below the ground surface. The Infinity site is immediately east of this exposure. The cultural affiliation and its potential for yielding significant archeological data is undetermined. However, the depth of the deposit suggests that it may be quite old. The site is within the multi-purpose pool limits of the lake and should be revisited in the event of a major lake drawdown.

14MY1342

Originally noted in 1972 by Carr, this site is on a high terrace immediately south of an unnamed intermittent tributary of the Elk river. The recovered artifacts, which included clay-tempered pottery sherds and one plain triangular projectile point, indicate either an Early or Middle Ceramic occupation for 14MY1342. The site is within the flood pool limits of the lake and its potential for archeological significance has not yet been specifically determined. Accordingly, testing is recommended to determine the site's potential for yielding significant archeological information.

14MY1343

This site was also reported to the survey by Carr in 1978. The site lies on a low terrace adjacent to the left or west bank of Squaw creek. The cultural affiliation and potential for archeological significance is currently undetermined. The site is presently inundated by the multi-purpose pool of the lake and should be revisited if the opportunity arises.

14MY1344

Carr reported this site to the Society in 1978 as being on a low terrace adjacent to the south or right bank of Card creek

near the confluence of Coon and Card creeks. The site is further delimited by Coon creek to the east. No diagnostic artifacts were recovered and the cultural affiliation is undetermined at the present time. The site is within the flood pool limits of the lake and its potential for archeological significance is as yet undetermined. Additional survey work is recommended to collect an artifact sample.

14MY1345

Reported to the Society in 1978, Carr identified this site as being situated on a low terrace remnant approximately .4 km northeast of the confluence of Squaw creek and the Elk river. The potential for yielding significant archeological data and the cultural affiliation for 14MY1345 is undetermined because of the absence of diagnostic materials and testing. The site is normally inundated by the multi-purpose pool of the lake. In the event of a lake drawdown, 14MY1345 should be revisited.

1978 INVESTIGATIONS

SURVEY

The 1978 field season, which was under the supervision of Society archeologist Bruce Jones, consisted of both survey activity and test excavations. As was set forth in the Scope of Work, the remaining Corps lands, which had not been previously examined for archeological sites, were surveyed to determine whether additional archeological remains were present.

The 1978 archeological survey was conducted by Ernie Carr and covered a wide range of topographic settings, some of which had a fairly low potential of yielding significant archeological remains. The investigations of these low potential areas was necessary in order to complete the non-exclusive survey called for in the Scope of Work. The areas surveyed consisted of hills or blufftops, the bases of bluffs for possible rock shelters and the floodplain of the Elk river and its principal tributaries. Carr also examined the lake shoreline for more recently exposed sites and the small feeder streams of the major water courses. The following additional 17 archeological sites were located during the 1978 survey:

14MY1346
14MY1347
14MY1348
14MY1349
14MY1350
14MY1351
14MY1352
14MY1353
14MY1354
14MY1355
14MY1356
14MY1358
14MY1359
14MY1360
14MY1361
14MY1362
14MY1363

These 17 sites, when added to the 86 sites reported prior to a 1978 field season, brought the total cultural resource inventory of the Elk City lake locality to 103 prehistoric archeological sites (Figure 4). Five of these sites are known to have been destroyed and are not included on the archeological resources map. These sites are 14MY315, 14MY318, 14MY321, 14MY323 and 14MY335.

The following is a discussion of the sites located by Carr during the 1978 field season.

14MY1346

This was the first site specifically reported during the 1978 Corps funded survey and assessment within the reservoir. The site

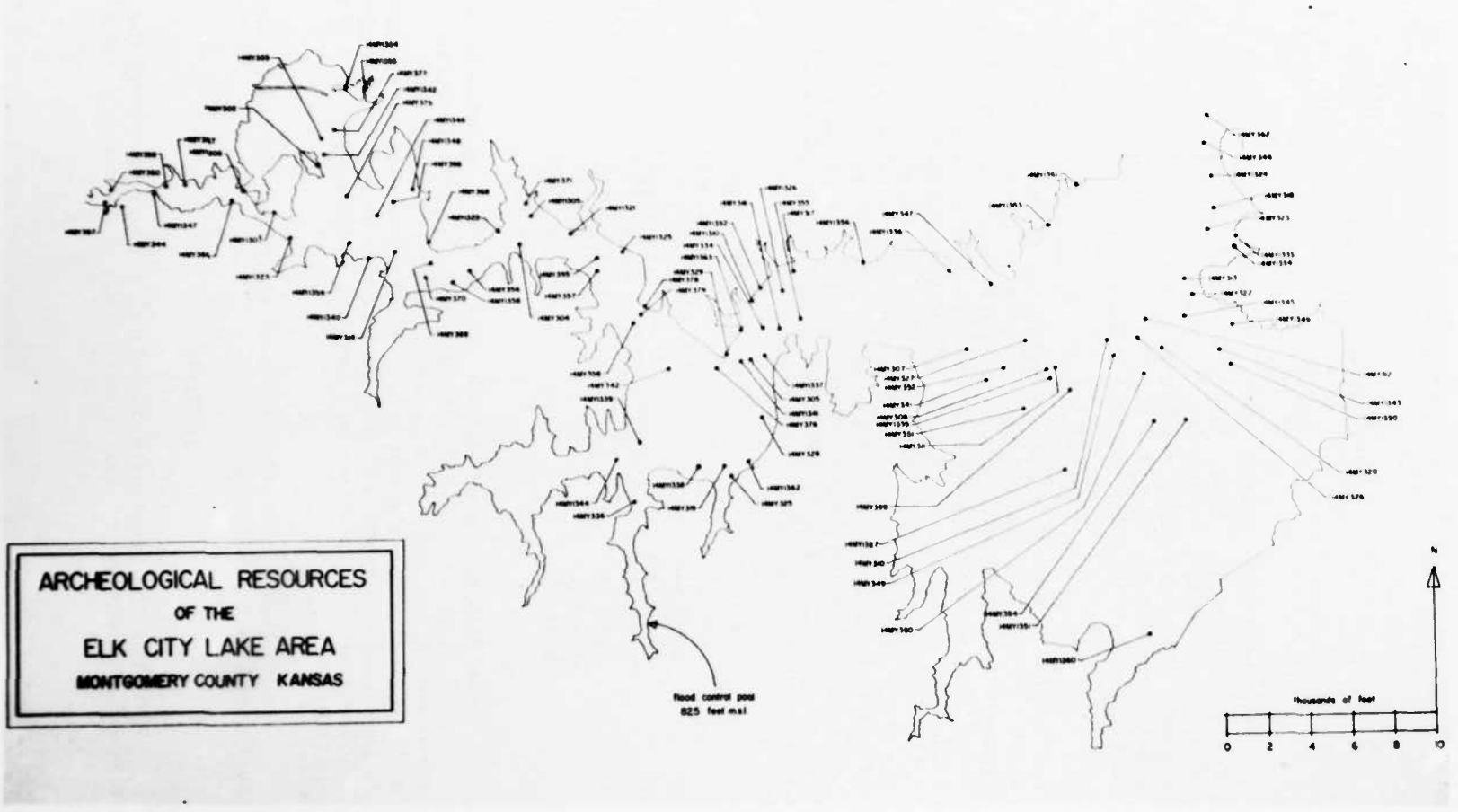

FIGURE 4. Archeological resources of the Elk City lake area.

is situated in a wash area which is bordered by a low stream terrace on the east and west sides. The site is approximately 100 m from the right or south bank of the Elk river. The recovered cultural materials consisted primarily of freshwater mussel shells, chert chips and burned limestone. The cultural affiliation was not determinable due to the undiagnostic nature of the exposed cultural materials. The site is within the flood pool limits of the lake and its potential for yielding significant archeological information is undetermined. Additional survey work is necessary in order to obtain an artifact sample.

14MY1347

This site is situated atop a low terrace which is adjacent to the south or right bank of Salt creek and is bordered by a slough on the southwest side. The recovered cultural materials included chert chips and flakes, one piece of burned bone, one small end scraper, one medium-sized triangular blade section and one small thin bifacial blade tip. The site is of an undetermined cultural affiliation due to the lack of diagnostic artifacts. The site is within the maximum flood pool level of the lake and its potential for yielding significant archeological data is yet to be determined. Additional survey work is recommended to collect an artifact sample.

14MY1348

This site is located on a terrace remnant a short distance northeast of a sharp bend in the Elk river which is further delimited by a road to the east and a deep slough to the west and south. The recovered and observed materials consisted of sandstone, burned limestone, chert chips, one small leaf-shaped blade and the base section of a dart point. The point base indicates a possible Middle Woodland cultural affiliation. The site is within the flood pool limits of the lake and its potential for archeological significance is undetermined. In order to obtain a larger artifact sample, additional survey work is recommended for 14MY1348.

14MY1349

This site is on the west side of a high terrace which extends in a north by south direction out into the lake. This area lies within the boundaries of the Elk City Lake State Park. The site was tested during the 1978 field season and a detailed discussion will be presented later in this paper. The recovered cultural materials consisted of burned limestone and sandstone, chert chips and flakes, one large sandstone muller, mussel shell, two small triangular points with expanding stems, and a large quantity of sand-tempered, smoothed over cord-roughened pottery

sherds. The pottery appears to represent a Middle Ceramic occupation, but the projectile points suggest an earlier Middle Woodland occupation. The site has been periodically inundated by the fluctuating lake level and appears to have been severely eroded. Jones observed a thin cultural stratum with very little cultural material present and concluded that a low potential for yielding significant archeological data was present. The site is within the upper limits of the multi-purpose pool and no additional investigations are recommended.

14MY1350

A site was located and tested during the 1978 field season which lies within the boundaries of the Elk City Lake State Park, a short distance from the east bank of Squaw creek. The site lies on a low terrace which is now part of the lake beach. The recovered cultural materials included chert chips and flakes, a small quantity of sandstone, one small well-made plano-convex end scraper, one end scraper fragment and four small plain triangular projectile point fragments. The projectile points suggest a cultural affiliation with one of the later Ceramic groups. Jones concluded the site had been completely eroded away and no longer has potential of yielding significant archeological information. The locale of the site is within the upper limits of the multi-purpose pool and this area is subjected to severe erosion by wave action. Due to the destruction of 14MY1350, no additional archeological investigations are recommended.

14MY1351

This site is immediately adjacent to the edge of the lake within the South Squaw Creek State Park area. Located and tested during the 1978 field season, the site was represented by four concentrations of sandstone gravels and chert chips. These concentrations were intermixed within a sandy silty deposit along a low terrace which runs along the edge of the lake. The diagnostic artifacts consisted of medium to large triangular blades with contracting or expanding stems which indicate a Middle Woodland occupation for the site. Jones concluded that the soil matrix had been removed by the wave action of the lake and therefore bears little or no potential of yielding significant archeological information. The site, or remnants of a site, are within the upper limits of the multi-purpose pool of the lake and no additional investigations are recommended.

14MY1352

A rock shelter was recorded at the base of a limestone bluff a short distance from an abandoned channel of the Elk river. The shelter is oriented in a northeast by southwest direction and

is approximately 3 meters high. The shelter extends for 3 meters under the rock overhang. The recovered cultural material consisted of two chert chips, two animal bone fragments, and one small plain triangular projectile point. The projectile point suggests either an Early or Middle Ceramic cultural affiliation. The site is within the flood pool limits of the lake and its potential for yielding significant archeological data is undetermined. Additional survey work and limited testing are recommended for 14MY1352.

14MY1353

Another rock shelter was recorded at the base of a limestone bluff which trends in a northeast to southwest direction along the north shore of the lake near its eastern end. This site was also tested by Jones and his findings will be presented later in this paper. There is abundant roof fall which has reduced the shelter to where there is almost no shelter at all. A large number of mullers and milling stones were located along with shell, bone, chert chips and flakes, mollusc remains, a few cord-roughened pottery sherds with shell and/or trash temper and a medium-sized triangular point with a rectangular stem and convex base. The site was determined to be eroded away and therefore of little or no potential for yielding significant archeological information. The locale of 14MY1353 is within the upper limits of the multi-purpose pool and no additional archeological investigations are recommended for this site.

14MY1354

A site is situated on a low terrace approximately 100 m north of the right or north bank of the Elk river and further delimited by an old abandoned railroad bed to the southeast. The recovered and observed cultural materials included a small quantity of chert chips, burned limestone and sandstone and one end scraper fragment. The cultural affiliation and potential for archeological significance is as yet undetermined. The site is within the upper limits of the flood pool of the lake and additional survey activity is needed to collect an artifact sample.

14MY1355

This site is on a low terrace a short distance from the north or right bank of the Elk river. There is an old Elk river meander scar to the north of the site and 14MY1354 is a short distance to the west. Two shell-tempered pottery sherds were recovered and indicate a possible Late Ceramic period cultural affiliation. The site is within the upper limits of the flood pool and its potential for yielding significant archeological data is undetermined. Testing is recommended to determine whether 14MY1355 has potential of yielding significant archeological information.

14MY1356

This was another rock shelter located at the base of a high east by west trending overhanging limestone bluff. The shelter is a short distance north of the left or north bank of the Elk river. There is an abandoned channel of the Elk river at the base of the hill below the shelter. The opening of the shelter measures 11 m east by west and is 11 m high. The interior is approximately 7 m deep. The recovered cultural material consisted of a few chert chips, three small shell fragments, one piece of burned bone and a limestone muller. The cultural affiliation and potential archeological significance of this shelter was undetermined at the time of the recording. The site is immediately above the flood pool level of the lake. Additional survey is necessary to obtain an artifact sample.

14MY1358

This site consists of a buried zone of cultural material which is eroding out of the south bank of an old abandoned channel of the Elk river. The left bank of the present Elk river channel is a short distance east of the site. The buried zone was comprised of both burned and unburned sandstone and limestone rocks extending for approximately 15 m along the south side of the abandoned channel. No diagnostic artifacts were recovered; therefore, the cultural identity and its potential for archeological significance is undetermined. The site is within the maximum flood pool level of the lake. Additional survey work is recommended with the intention of obtaining an artifact sample.

14MY1359

This site is situated atop a terrace adjacent to the west or right bank of Salt creek, a short distance from its confluence with the Elk river. The recovered cultural materials included chert chips and flakes, one limestone muller fragment and the base portion of a bifacial blade. The cultural identification and potential for yielding significant archeological data remains undetermined. The site is within the flood pool limits of the lake and additional survey is necessary to collect an adequate sample.

14MY1360

This site consists of a very thin exposure of cultural debris located in the east or right bank of Squaw creek approximately 1.6 m below the present ground surface. The exposure contains a thin lens of dark gray silty loam soil with a few lightly burned limestone rocks and bone fragments within the lens. No diagnostic cultural material was collected. The potential for yielding

significant archeological data and the cultural identification was undetermined when the site was reported. The site is within the flood pool limits of the lake. Testing is recommended to determine whether 14MY1360 is capable of yielding significant archeological information.

14MY1361

A rock shelter is under a large east by west trending limestone overhang. The shelter opening faces to the south, overlooking an old Elk river channel which lies at the base of the hill below the shelter. The shelter opening measures 12 m east by west and is approximately 8 m high. The interior extends 6 m under the limestone overhang. The collected cultural materials consisted of a few chert chips and flakes and one bone fragment. The cultural identification and its potential for yielding significant archeological information was not determined. The elevation of the site is a short distance above the flood pool level of the lake. Additional survey work is necessary to obtain an adequate artifact sample.

14MY1362

This site consists of a deeply buried zone of cultural debris in the east or right bank of Card creek. This cultural zone is approximately 50 to 60 m in length and is located 1.5 m below the ground surface. The cultural material included a level of burned and unburned sandstone rocks which were eroding out of the creek bank. No data was available for determining the cultural affiliation and the potential archeological significance of this mound is presently undetermined. The site is a short distance above the maximum flood pool level of the lake. The mound should be tested to determine its composition.

SITES TESTED DURING THE 1978 FIELD SEASON

The second element of the 1978 field season was the testing of selected potentially significant archeological sites to determine the depth and areal extent of the cultural deposits. The 12 selected sites were endangered by project operations, i.e., fluctuating water levels, crop leases, etc. Four of the sites were located during the 1978 field survey and included 14MY1349, 14MY1350, 14MY1351 and 14MY1353. The remaining eight sites were recorded by the survey prior to the 1978 field season. These sites included 14MY302, 14MY325, 14MY334, 14MY341, 14MY342, 14MY350, 14MY378 and 14MY1310. All of the records and recovered material from these 12 sites are on file in the Archeology Department of the Kansas State Historical Society. Site maps and profiles are presented for those sites which, to this writer, contained the most significant data. In addition, plane table maps were made for all tested sites and are on file at the Society.

14MY342

14MY342 lies atop a prominent terrace between the right or south bank of the Elk river and an abandoned farmstead (Figure 5). The site, known locally as the "Indian Garden", was initially reported to the Archeology Department of the Society in January, 1972 by Ernest Carr. It now appears as a scatter of lithic flaking debris and tool fragments lying across approximately two acres of land which has apparently only recently been placed in cultivation. Cultural material was observed to extend north and west from the cultivated field toward an area of brush and trees, and recent tests with an Oakfield soil sampling tool clearly indicate that the site extends for an additional 70-80 m into the uncleared area.

The main features initially discernible at the site were two large concentrations of burned limestone pebbles and cobbles exposed on the ground surface. One of these lay clearly exposed and rather scattered at the east end of the site. The other concentration was less dense and lay at the west end of the site adjacent to the brush. Lithic debris and stone tool fragments were found on the ground surface in the areas of the burned limestone exposures as well as between them.

A considerable amount of artifactual material has been collected from the surface of 14MY342 since its discovery, and the remains suggest that at least two and perhaps three prehistoric components are presented at the site. This material includes a small number of cord-roughened, clay-tempered pottery sherds recovered from a restricted area at the west end of the site. These specimens are of varying thicknesses, but are generally rather thin and contain apparently naturally occurring limonite inclusions. They are similar to the Middle Ceramic

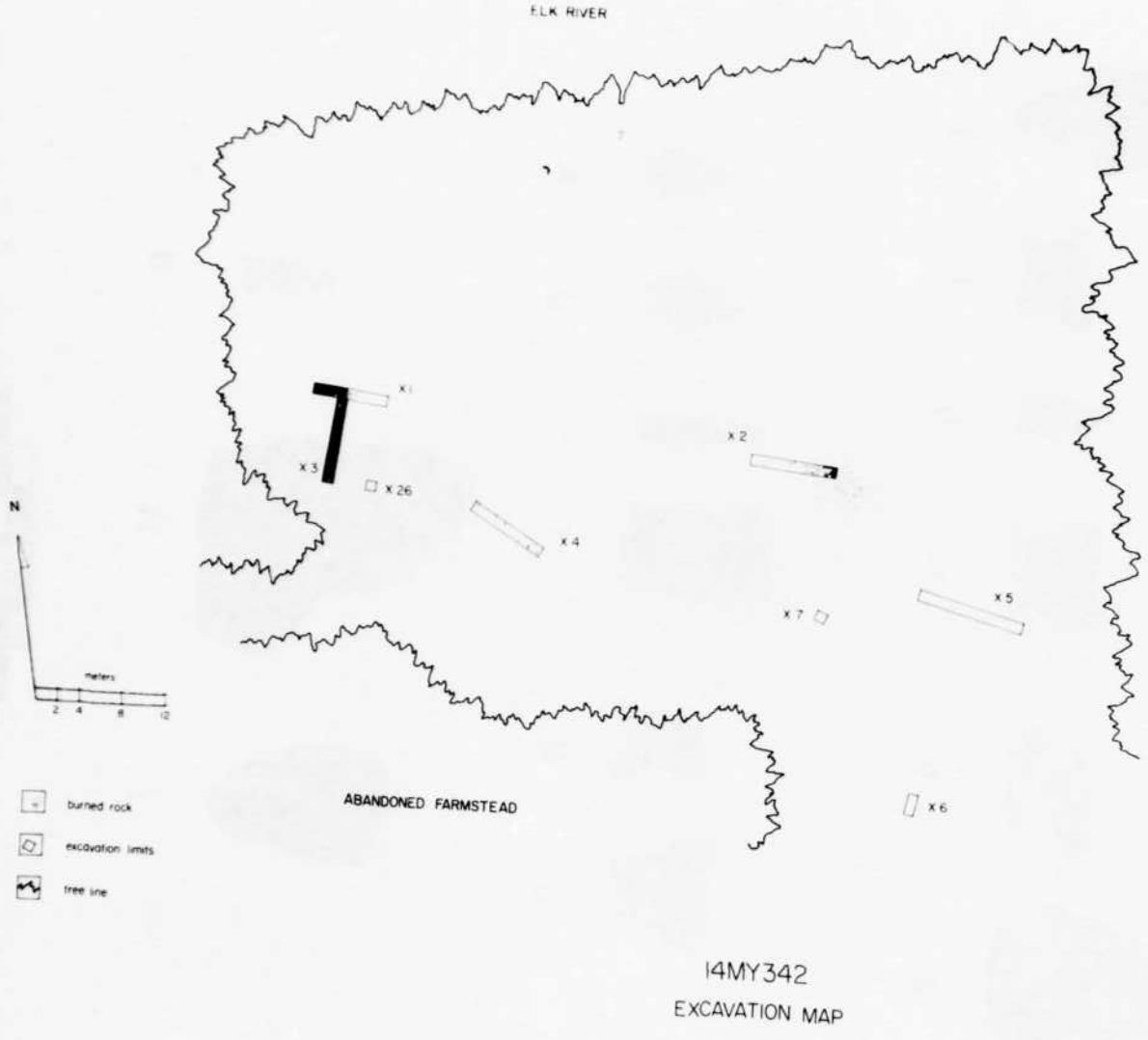

FIGURE 5. Site 14MY342 and associated excavation units

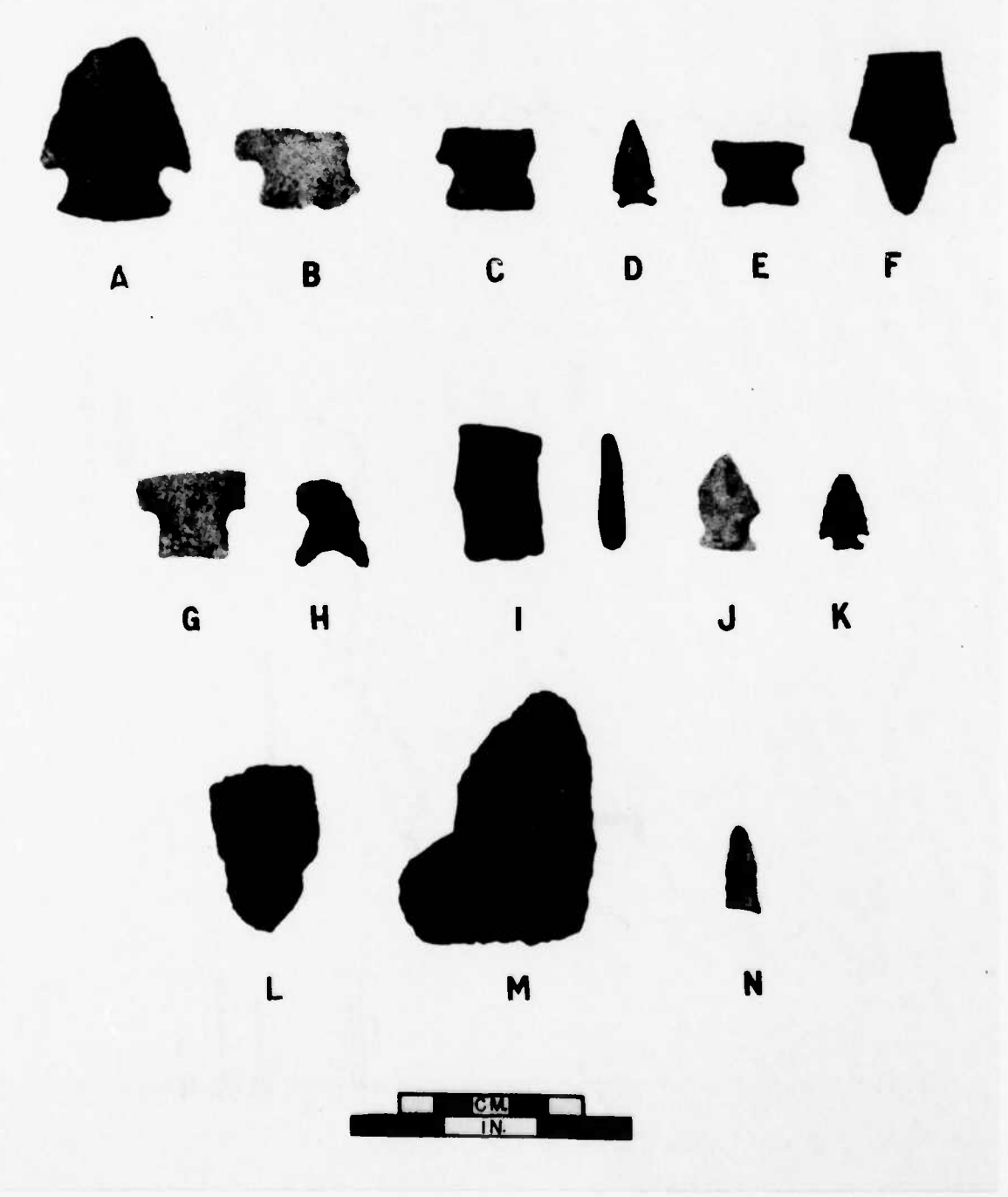

PLATE 1. 14MY342, artifacts.

Pomona ware found at other locations in the Elk City lake area (Marshall 1972) as well as elsewhere in eastern Kansas (Wilmeth 1970).

Additionally, the surface collection includes a number of chipped stone projectile points and point sections. The majority of these are medium to large sized corner-notched dart points which represent Marcos, Martindale, Ensor, and Scallorn stylistic types (Plate 1,A-D) (Bell 1958, 1960). These point classes are usually associated with Early Ceramic occupations in southeastern Kansas (Marshall 1972; Rowlison 1977). A number of other points and point fragments, including medium-sized shallowly corner-notched points and straight and contracting stemmed specimens representing Ellis, Gary, Bulverde, and Uvalde stylistic types (Bell 1958, 1960), appear to fit within the variation expected for the Late Archaic-Early Ceramic period (Plate 1,E-H). Finally, the surface collection contains sections of two small probable arrow points, one plain triangular specimen and one basal and side-notched point. These are representative of the Fresno and Harrell types (Bell 1958, 1960) and are generally characteristic of Middle Ceramic occupations.

The terrace on which 14MY342 lies slopes downward from west to east, with approximately two meters of elevation difference between the west and east ends of the site. It is quite likely that the degree of slope has been accentuated in the recent past by the scouring effect of the Elk river, which has left its channel and cut diagonally across the extreme eastern end of the site during periods of high water. The brush and timber at the west end of the site may have served to retard erosion in that area; however, the eastern end of the site appears to have been severely eroded and its elevation reduced.

At the commencement of the 1978 investigations 14MY342 lay open and temporarily free of ground cover. Recent heavy rains had further eroded the eastern end of the site, exposing and scattering a considerable amount of the burned limestone concentration there. The site was arbitrarily divided into Areas 781 (west) and 782 (east) for purposes of defining limits for control of surface collection, and excavation of a series of meter-wide trenches was begun (Figure 5). The test excavations were arranged to investigate both the nature of the rock concentrations in Areas 781 and 782 as well as to expose subsurface features lying adjacent to or between those areas.

Stratigraphy

The stratigraphy encountered at 14MY342 appeared to be that of a relatively simple series of strata, the uppermost of which was a homogeneous dark gray brown (10YR 4/2 on the Munsell chart) silt loam of an approximate 12 to 20 cm depth. This soil graded into a clay loam of the same color which extended to as deep as approximately 55 cm below the surface in the west end of the site. Below the clay loam lay a yellowish red (5YR 4/6) clay which appeared to represent the sterile subsoil, and excavation of the various test units generally ceased when contact with this clay was reached. The contact itself was often indistinct and was frequently a gradation from one color of soil into another.

Cultural material consisting of lithic debris, chipped stone implements, pottery, bone, and shell was contained in the homogeneous dark gray brown silt loam and clay loam together with occasional light orange and red flecks of burned earth. Burned rock was also found scattered and in concentrations within the dark soil. No cultural material was observed in the yellowish red clay.

Area 781

Four test excavations were placed in Area 781, the first of which, X1, was a 1 m by 7 m trench begun in the immediate vicinity of the western concentration of burned limestone exposed on the ground surface. Excavation proceeded by the removal of approximately 15 cm of overburden and the subsequent exposure of a very heavy concentration of consolidated pebbles and cobbles of burned limestone and sandstone, material which duplicated in kind that observed on the ground surface. The burned rock concentration was composed primarily of small, irregularly-shaped, slightly rounded pieces of limestone, most of which had been oxidized to a gray or white color. Infrequent pieces of burned fine grained sandstone were also observed in the concentration but were in the minority. The soil fill above and in the rock feature contained light chert flaking debris, a few sections of splintered mammal bone, sections of mussel shell, and flecks of burned earth, but no diagnostic artifacts.

Designated F5, the concentration was further exposed by the excavation of an intersecting trench, X3, which clearly showed the compact nature of the burned rock and its shallow depth below the ground surface (Plate 2). When a portion of the south wall of X1 was exposed in profile, the burned rock was observed to dip gently to the east and to finger out, suggesting that the excavation had contacted an edge of the feature (Figure 6).

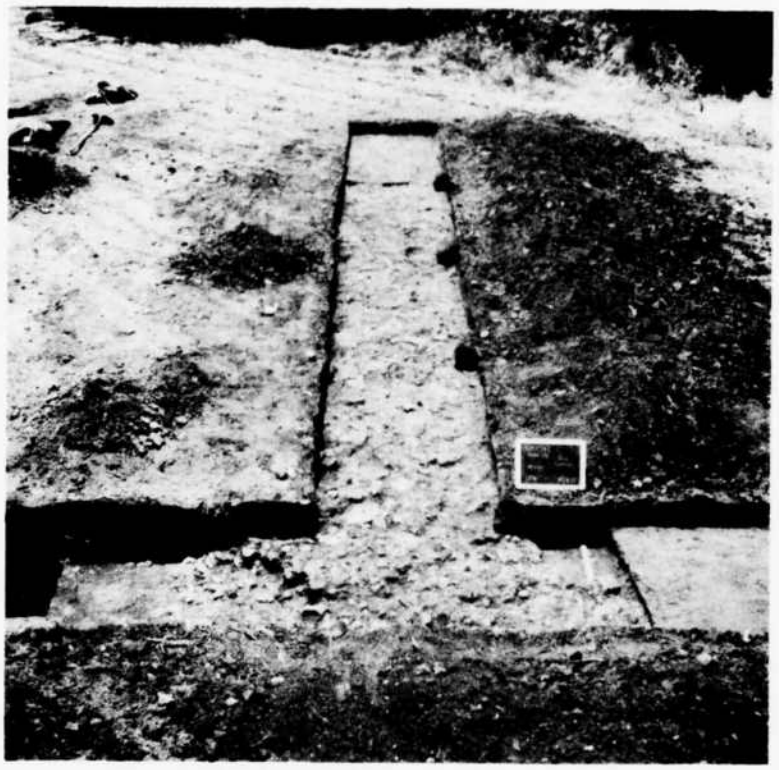

PLATE 2. 14MY342, F5, burned rock complex exposed in X1 and X3. View to south.

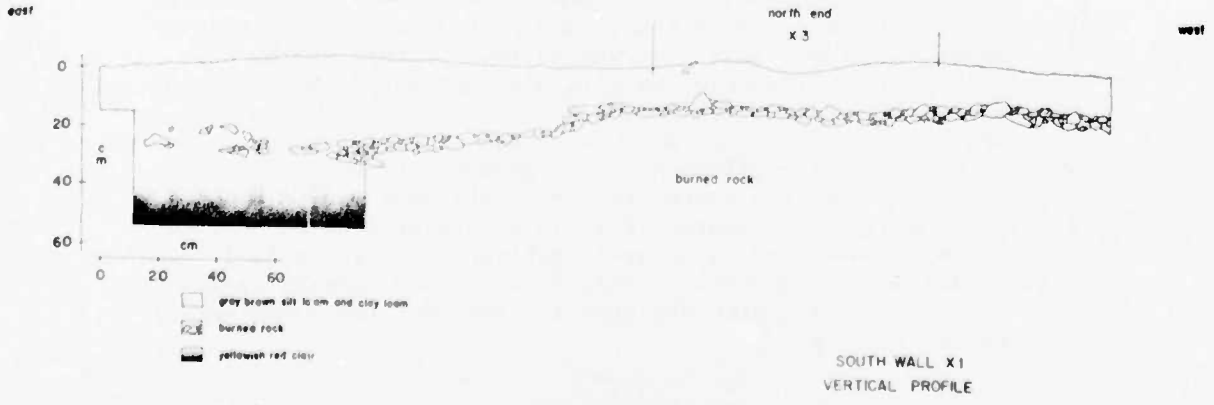

FIGURE 6. 14MY342, vertical profile of the south wall, X1.

Excavation Unit 26 was a one meter square placed a short distance south and east of X1 and X3 as a stratigraphic control. Excavated to a depth of 85 cm below the ground surface, the test contacted a more massive concentration of the burned stone at a greater depth than in the other two tests, and finally reached sterile subsoil at a depth of approximately 75 cm below the surface. The profiles of the south and west walls of X26 are presented in Figure 7, and it is apparent that in that location the burned rock stratum lies at a greater depth than in X1 and X3 and that it dips sharply to the west and to the south. This information, coupled with the observation of the east-dipping rock stratum encountered in X1, suggests that the dense consolidated burned limestone lies atop a highly irregular ground surface indicated by the contact with the sterile clay. However, there was no indication that the irregular surface was intentionally prepared.

Finally, X4 was a 1 m by approximately 7 m trench excavated across the top of the highest point on the cultivated portion of the terrace, a location away from the western concentration of burned rock. Excavation Unit 4 was excavated to a depth of approximately 60 cm below the surface, and mixed soil and cultural material were observed to a depth of 40 cm, the approximate contact with the yellowish red clay. Although no concentrations of burned rock were noted which were similar to those of the other three excavations in Area 781, scattered burned rock was present to the 40 cm level in what appeared to be an intact cultural stratum. However, the excavation did not expose features such as post molds or hearths which would be suggestive of structural remains in this portion of the site.

Area 782

Four test excavations were opened in Area 782. The principal excavation, X2, was a 1 m by 8 m trench placed at the west edge of the exposed and highly scattered burned rock feature at the east end of the site. Excavation in this unit contacted the yellowish red sterile clay at only 20-25 cm below the surface. While burned sandstone and limestone were exposed at the contact, which duplicated in kind the material seen on the ground surface and which appeared in a subsurface concentration at the east end of the trench (Plate 3), the cultural level in X2 appeared to be destroyed by erosion and subsequent cultivation. Artifactual remains, discussed elsewhere in this report, were present in the fill above the contact with the sterile clay, but their contextual relationship is suspect.

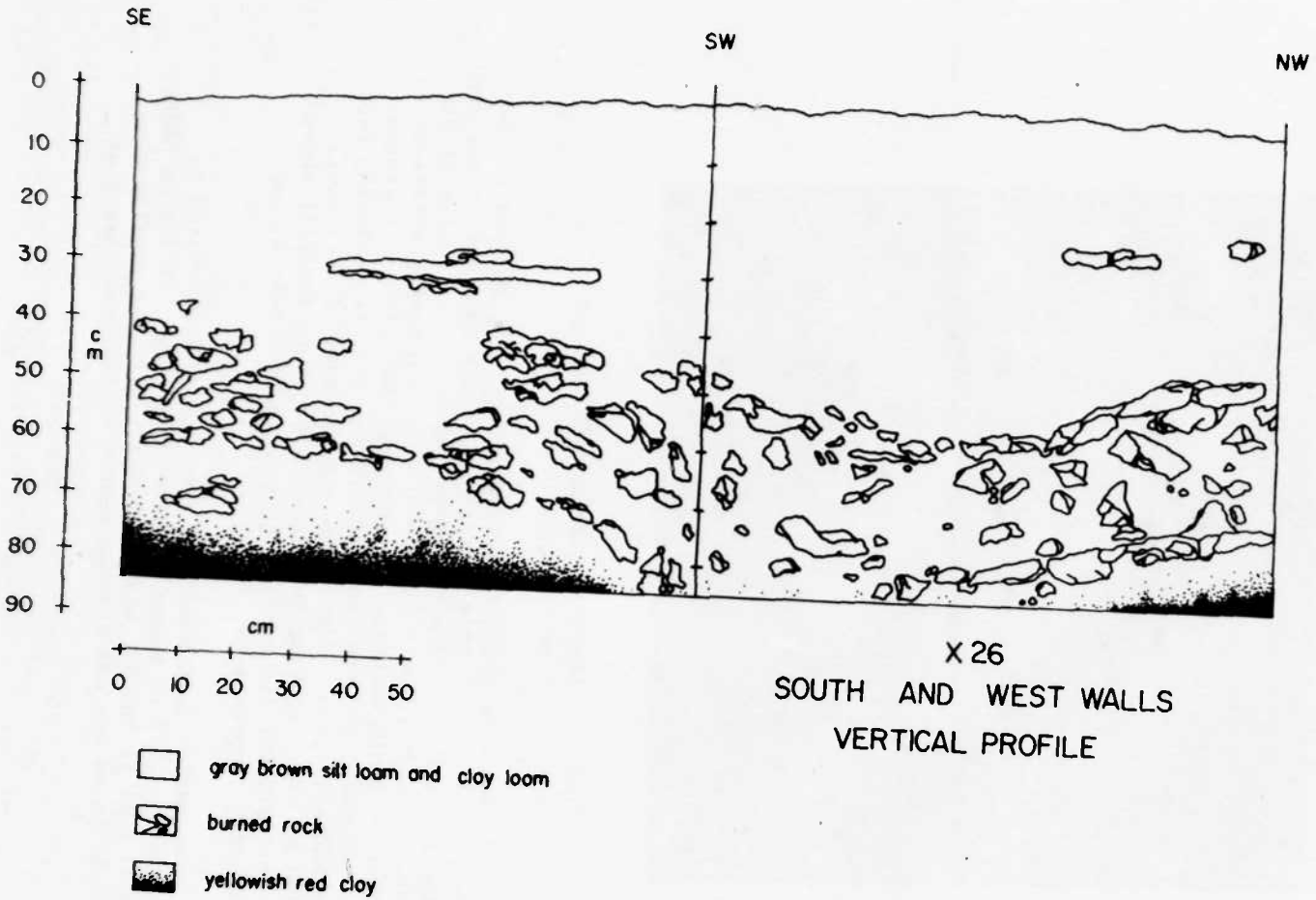

FIGURE 7. 14MY342, verticale profile of south and west walls, X26.

PLATE 3. 14MY342, burned rock exposed in X2. View to east.

The remaining three test excavations, X5, X6, and X7, were placed at slightly higher elevations, on or adjacent to the edge of the terrace now being formed by the periodic erosion of Elk river. Excavation Unit 5 was a 1 m by 10 m trench excavated to a depth of 13-18 cm below the surface. No cultural features were recorded, and the contact with the sterile yellowish red clay was only about 12 cm below the surface. A very small amount of chert flaking debris was present in the fill above the contact, but its context appears to have been almost completely compromised.

Excavation Unit 6 was a 1 m by 2 m test excavated to approximately 22 cm below the ground surface. It lay on higher ground than X2 and X5, and the contact with the sterile clay subsoil in X6 was not reached before excavations ceased at

14MY342. However, very little cultural material was present in the fill of the excavation. A one meter test square, X7, was also placed atop the terrace, but produced little cultural material and contacted the basal clay at a depth of about 18 cm below the surface.

Description of Artifacts

Area 781

Ceramics

One fine textured clay-tempered pottery rim sherd was recovered from the 15-30 cm level in X4 (Plate 1,I). This specimen retains a pattern of vertical exterior cord-roughening extending to the lip, which is simple and rounded. The interior surface of the sherd appears to have been plain. The sherd is very pale brown in color (10YR 7/4), 9 mm thick, and appears to have been derived from a medium-sized to large vessel with a simple straight rim. The sherd contains brown limonite inclusions similar to those in the ceramic material previously collected from Area 781 by Carr, and all of the sherds in the collection thus far may well be part of one vessel. The sherds are representative of Pomona ware, the diagnostic pottery of the Pomona focus, the Middle Ceramic cultural manifestation (Wilmeth 1970) identified elsewhere in the Elk City lake area (Marshall 1972).

Chipped Stone Tools

Lithic material collected in Area 781 included three projectile points and point sections, all of which were found on the ground surface. One is a part of a medium sized dart point with a corner notch, an expanding stem, and a slightly convex base. Manufactured from a pink colored heat treated chert, the point is typically Early Ceramic and is stylistically representative of the Ensor type (Bell 1960). A second specimen has been manufactured from a glossy white heat treated chert (Plate 1,J). It is generally triangular in shape with straight blade edges, wide corner notches, a rapidly expanding stem, and a straight base. It is 27 mm long, 17 mm wide at the widest part of the blade, and is also stylistically similar to the Ensor type. Finally, one small corner-notched Scallorn point (Bell 1960) was recovered which is quite thin and delicate and which has been manufactured from a pink colored heat treated chert (Plate 1,K). Lacking its tip, the point has slightly serrated edges and is 21 mm long and 14 mm in maximum width. It, too, is representative of an Early Ceramic occupation.

Other chipped stone material collected in Area 781 included several sections of undiagnostic bifaces, two of which are quite thin and well made. Two other specimens, larger and less carefully manufactured, may represent heavier cutting implements or bifaces in transition of manufacture (Plate 1,L-M), although both have evidence of bifacial edge wear (Ahler 1970) suggesting that they were fully functional and in fact used prehistorically as they now appear. One gray chert drill tip section was also recovered at a depth of 38 cm below the surface in X4 (Plate 1,N).

A sizable number of chert flakes were collected in the excavations in Area 781, the majority of which have been heat treated. The presence of numerous small flat flakes and bifacial retouch flakes suggest that stone tool manufacture and maintenance activities occurred in this part of the site, although no cores or core fragments were recovered. The raw material type most consistently represented is the distinctive banded Florence chert.

Faunal Remains

Area 781

A small amount of mammal bone and mussel shell was recovered in Area 781, where it was restricted in distribution to the fill above and within F5, the burned rock complex exposed in X1 and X3. A single identifiable femur section represents *Odocoileus virginianus*, white tailed deer. Although a detailed analysis of the shell was not undertaken, much of the material appears to represent *Crenodonta peruviana*, a unionid species found elsewhere in southeastern Kansas.

Description of Artifacts

Area 782

Chipped Stone Tools

Chipped stone cultural material recovered from Area 782 came from both surface and excavated contexts and consisted of a more limited series of bifacial implements and a larger number of flakes than were collected in Area 781. There were no complete projectile points recovered from Area 782 during the recent work, although a small broken section may represent a barb from a Middle Woodland point. The remaining bifaces are restricted to elliptical and straight sided specimens of various sizes (Plate 4, A-C), all of which show evidence of bifacial use wear. One incomplete specimen (Plate 4,D), manufactured from a glossy white banded chert, may represent a broken or reworked dart point.

Two drill sections are included in the collection (Plate 4, E-F). One is a symmetrically expanding stemmed drill which is rather thick and lozenge shaped in cross section and which has a convex base. The second specimen, an expanding based drill, is much shorter and less symmetrically shaped. The latter specimen shows considerable edge wear, while the first has none and may have been broken in manufacture.

The larger number of flakes exposed on the ground surface in Area 782 appears to be a biased figure resulting from the greater degree of erosion there; that is, the soil matrix has been removed by natural and mechanical agents while cultural material in the soil fill has become concentrated on the deflated ground surface. Detailed flake analysis was not undertaken on the collection, but the nature of the flaked material in Area 782 outwardly appears to be similar to that collected in Area 781, with a large percentage of small heat treated flakes of Florence chert and a complete lack of cores and core fragments, two criteria observed in both areas.

Ground Stone Tools

One small section of a grinding slab was excavated from Area 782 (Plate 4,G). Manufactured from a fine grained consolidated sandstone, the specimen has one extremely smooth and worn side. The opposite face is quite irregular and appears to represent the fractured surface of the slab.

Conclusions

Although surface material collected from 14MY342 over a period of several years has suggested that the site might contain a Late Archaic component, testing in the two burned rock concentrations did not recover additional data supportive of such a specific occupation. Rather, the excavated diagnostic material indicates a somewhat later utilization of the area, one or more occupations by Early Ceramic populations in the early centuries A.D. The Pomona ware recovered from the single location in Area 781 provides evidence of a subsequent Middle Ceramic occupation of at least the western portion of the site, probably from between A.D. 900 and A.D. 1300.

The principal archeological features observed at the site were the burned rock concentrations, although the functions of these complexes remain unknown. The recent investigations found the two features, particularly F5, the western one, composed of densely packed burned limestone and sandstone. Observation of the soil profile below the rock did not provide strong evidence to indicate that the rock mass was fired in place, but rather

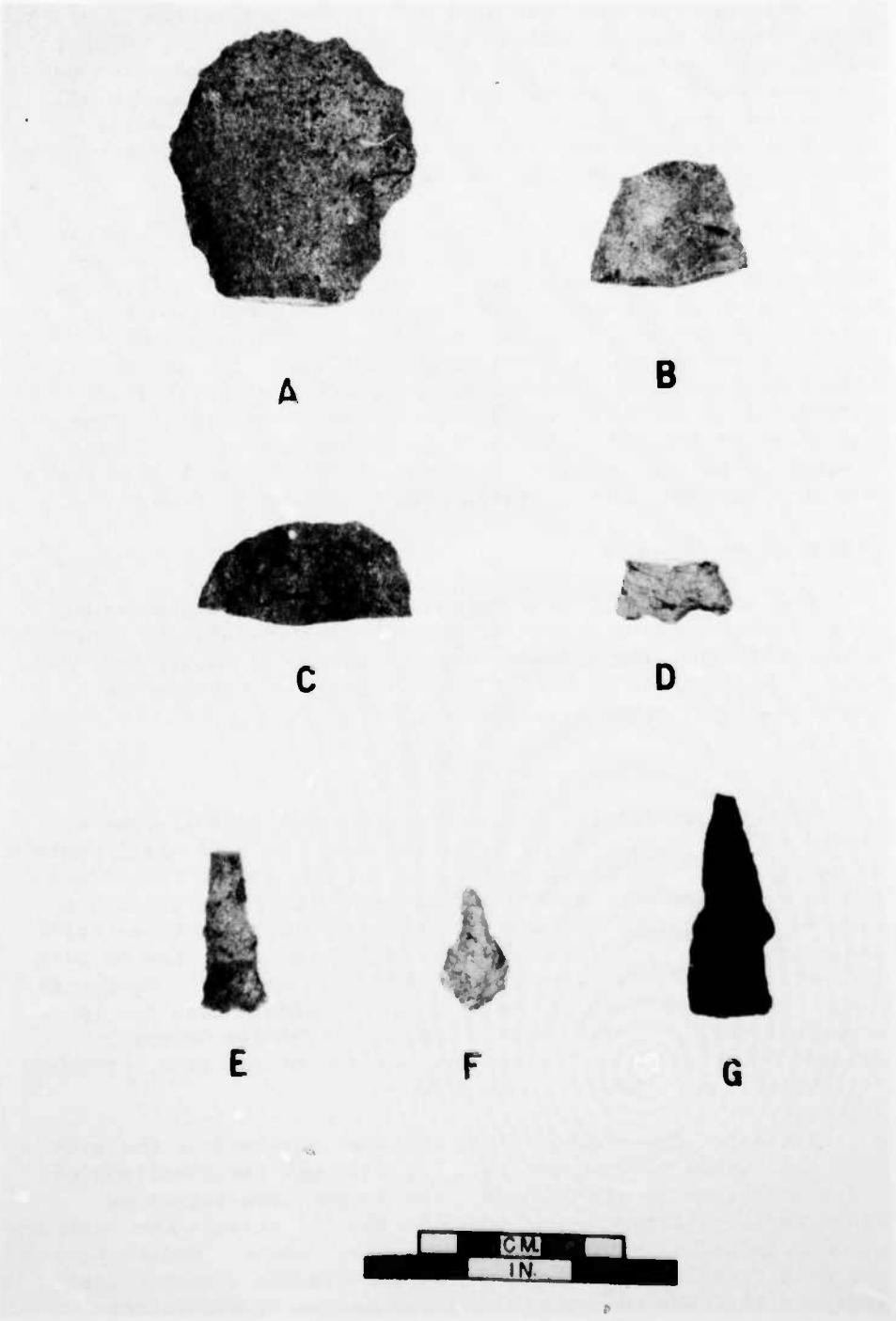

PLATE 4. 14MY1342, artifacts.

suggested that it had been deposited post-firing. Additionally, very little charcoal was noted within the features to support in situ oxidation, and the faunal material collected from the fill above and in F5 was not burned.

Burned rock complexes are not unique to southeastern Kansas, and have been investigated and reported upon in Oklahoma and Texas. In Kansas, these features have been associated with Archaic occupations. At 14EK331 in the Lower Elk river watershed just above Elk City lake, a deeply buried burned rock concentration interpreted as a hearth contained diagnostic Archaic artifacts and yielded a radiocarbon date of 3,650 ± 110 B.C. (Barr 1974). Deeply buried burned rock hearths have also been examined in the Upper Verdigris watershed to the north, where radiocarbon dates of 1,300 ± 140 B.C. (14GR307) and 1,830 ± 140 B.C. (14LY305) were obtained (Calabrese 1967). Finally, a burned rock hearth excavated at 14MY309 in the Elk City lake area produced a radiocarbon date of 1,730 ± 180 B.C. but contained no diagnostic artifactual remains (Marshall 1972:94-100).

To the south in northeastern Oklahoma, there has been research directed at fired limestone mounds on bluff tops in Mayes county (Barr 1964:56-77). These features characteristically contained interior hearths, ash and charcoal lenses, and abundant notched and stemmed projectile points and other stone implements. Their function as hearths was supported by reduction of the chert material found in the mound fill. Elsewhere in northeastern Oklahoma, several mounds along the Little Caney river were found to be composed of fired sandstone fragments (Vaughan 1975:116-131). These features, apparently the result of gradual accumulation of hearth material, contained quantities of chipped and ground stone tools but little faunal material was recovered.

Comparative data for the Oklahoma burned rock mounds have usually included the burned rock middens investigated to the south in Texas (Vaughan 1975; Barr 1964). However, although the latter features were found to be similarly composed of hearth waste, they were larger in size than the Oklahoma mounds and contained more abundant artifactual and faunal remains, suggesting functional differences between the two sets of phenomena.

Such information unfortunately sheds little light on the features at 14MY342. Because significant diagnostic artifactual material was not recovered from the excavations, it is still possible to only suggest an original broad Late Archaic-Early Ceramic deposition of the burned sandstone and limestone, and by specification, the recent tests could not address themselves to

problems such as a functional explanation of the features. While smaller complexes could be explained as accumulated hearth waste, it is tenuous to suggest such an interpretation for the truly massive concentration in Area 781. It was observed that the rock complex in the western part of the site lay atop an irregular ground surface (Figure 7); it was also observed that the rock concentration in Area 781 extended for a considerable distance to the north and west, so that the feature can accurately be described as immense. However, further explanation of the concentration must await more intensive and extensive investigations.

Recommendations

The severe erosion of the cultivated eastern end of 14MY342 has stripped the overburden from the burned rock concentration there, scattering cultural material and lowering the cultivation zone to a level where the combined effects of farming and flooding have almost destroyed the archeological context there. To the west in Area 781, the burned rock complex is, for all intents and purposes, intact. Part of the land is covered by brush and may never have been farmed, and that part of the feature recently examined in the cultivated part of the west end of the site was not badly scattered and did not appear to have been extensively cultivated.

Archeological materials were observed between the two burned rock features to a depth well below the cultivation zone. Should habitation remains be present at the site, and should they not be coterminous with the burned rock complexes, they may well be present in locations adjacent to X4.

There appears to be a significant amount of 14MY342 which remains essentially intact and retentive of archeological data. The uncultivated portion of the site will probably remain so intact in the immediate future. However, continued cultivation of the portion of the site which was planted at the time of the 1978 investigations will drastically alter or destroy the context of the rock feature in Area 781 in a very short time. Because the site retains data which may be pertinent to a functional study of burned rock complexes in Kansas and elsewhere, it is therefore recommended that 14MY342 be preserved until research can be conducted. Such investigation should encompass the various areas of the site, hopefully addressing itself to, among other problems, a functional explanation. It is quite likely that removal of the area of 14MY342 from cultivation and sowing it in grass would provide such temporary preservation.

14MY302

14MY302 was identified by Tom Witty in September, 1961, during the initial archeological survey of the Elk City lake area (Witty 1962:4). The site lies along a prominent cultivated terrace adjacent to the west or right bank of the Elk river (Figure 8). The cultural material is now present across two to three acres of the surface of the terrace and its slope, a larger area than that discerned when the site was first identified. The primary concentration of material was observed at the southern end of the field in which the site lies, and it consisted of abundant chert flaking debris, occasional bone sections, and infrequent fragments of burned limestone.

Artifactual remains from 14MY302 had been collected and provided to the Society by Ernie Carr at several times subsequent to the initial identification of the site. Included in the collection are over 30 rim and body sherds which represent several clay-tempered vessels, all but one of which appear to have been cord-roughened. One rim sherd has been derived from a vessel with a vertical rim and a simple rounded lip (Plate 5, a), and cord marking extends vertically from the lip on the sherd exterior. The sherd interior is plain. This and most of the remaining sherds are yellow in surface color (10YR 7/8) with a gray (10YR 5/1) core, and the majority are 7 to 8 mm thick. The material is basically similar to Pomona ware, the diagnostic pottery of the Middle Ceramic Pomona focus identified in the Elk City lake area (Marshall 1972) and elsewhere in eastern Kansas (Wilmeth 1970).

Six remaining sherds, probably from one vessel, are primarily light gray (2.5Y 7/2) with eroded traces of very pale brown (10YR 7/3) clay on their exterior surfaces. The six sherds are consistently 5 to 6 mm thick, and appear somewhat friable in cross section, perhaps due to the use of an indurated clay or a shaly clay in their manufacture. They are relatively hard. The single rim sherd in this group (Plate 5,B) indicates that the parent vessel had a slightly constricted neck and a simple rounded lip. However, additional data on vessel shape and size are not obtainable from the small sample. These sherds appear to have a plain exterior and interior surface finish. However, one bears two distinct broad shallow impressions which appear to be part of a trailed decoration (Plate 5,C). The six sherds cannot be easily placed in or associated with one of the known local prehistoric cultures, although their temper and hardness suggest a Middle Ceramic origin.

Chipped stone artifacts previously collected from 14MY302 include a variety of thermally altered corner-notched expanding

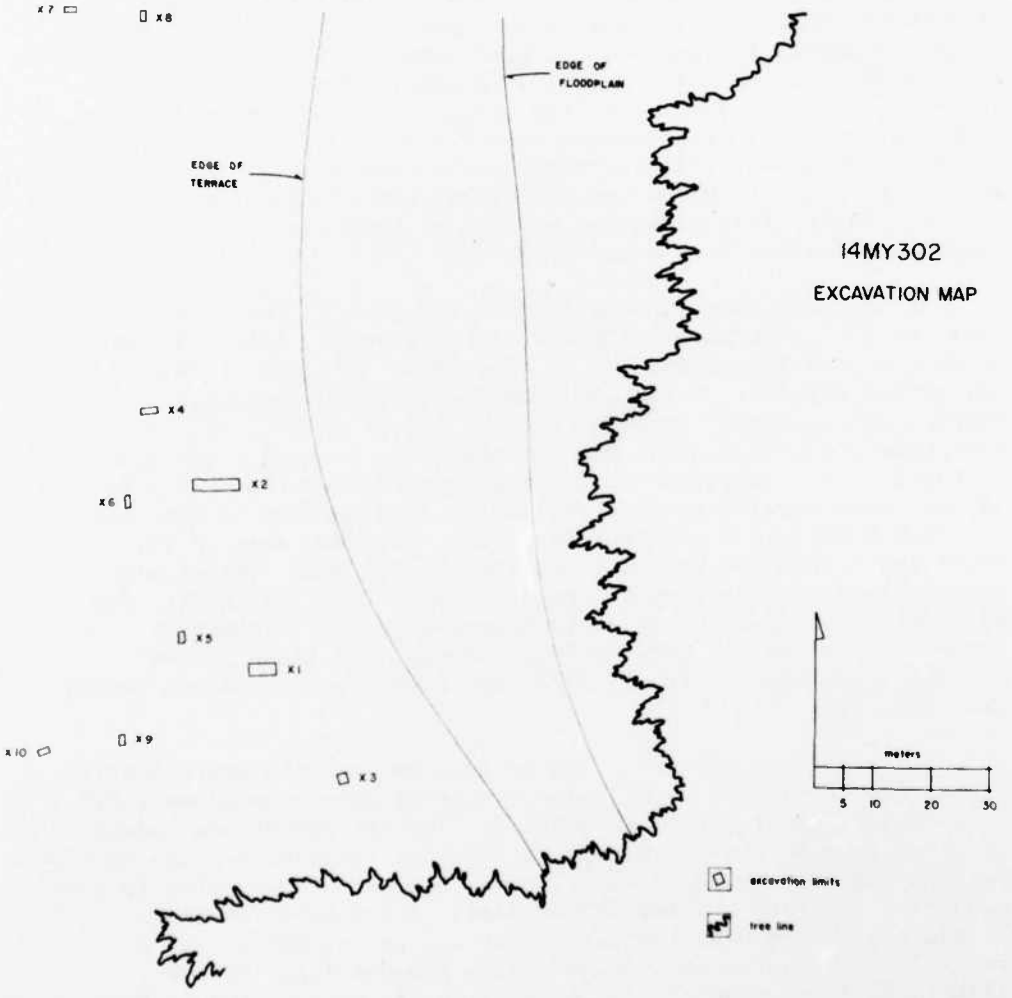

FIGURE 8. 14MY302 and associated excavation units.

stemmed projectile points representing Castroville, Ensor, Edgewood, Scallorn, and Williams stylistic types (Bell 1958; 1960) (Plate 5,D-J). These have been demonstrated to be associated with Early Ceramic or Middle Woodland occupations elsewhere in the Elk City lake area (Marshall 1972). However, one small triangular Huffaker point (Bell 1960) bearing two notches along one side and a single opposing side notch was also found on the surface of 14MY302 (Plate 5,K), and similar small plain and side-notched points have been found in Middle Ceramic components in the area (Marshall 1972).

Three ground stone implements are represented in the surface collection, and all three appear to be incomplete sections of sandstone mullers. Two are either subrectangular or ovate in longitudinal plan view and have opposing worn surfaces with transverse abrasion scars. The third specimen is badly fragmented and bears only a portion of a ground surface. The most complete muller is 11 cm long, 8 cm wide, and 5 cm thick.

Finally, collections made at 14MY302 in 1976 included two irregularly shaped pieces of fired clay. The specimens are yellow or reddish brown in color, and both bear stick impressions and appear to represent baked clay daub. Such material has previously been considered indicative of structural remains, and is probably related to a Middle Ceramic occupation (Witty 1967:2).

The nature of the surface material collected since the initial identification of 14MY302 would thus suggest two components, one a Middle Woodland occupation, the other a Late Woodland or Middle Ceramic occupation. However, artifactual material recovered from the surface of the site was not collected by a method which would emphasize horizontal provenience. Information on the horizontal and vertical relationships between the earlier and later component was not available, and it was possible, therefore, that the Middle Ceramic pottery and the clay daub collected at the site was quite localized in distribution and may have been deposited during a reoccupation of a small part of a larger Middle Woodland site.

14MY302 was under cultivation but free of ground cover at the start of the 1978 investigations. Ultimately, ten test excavations were placed in the top of the terrace, and initially a number were placed in areas where surface material was exposed in quantity (Plate 6). Testing for control occurred later between concentrations of surface material as well as at two locations where subsurface complexes of burned rock were contacted with the Oakfield soil sampling tool.

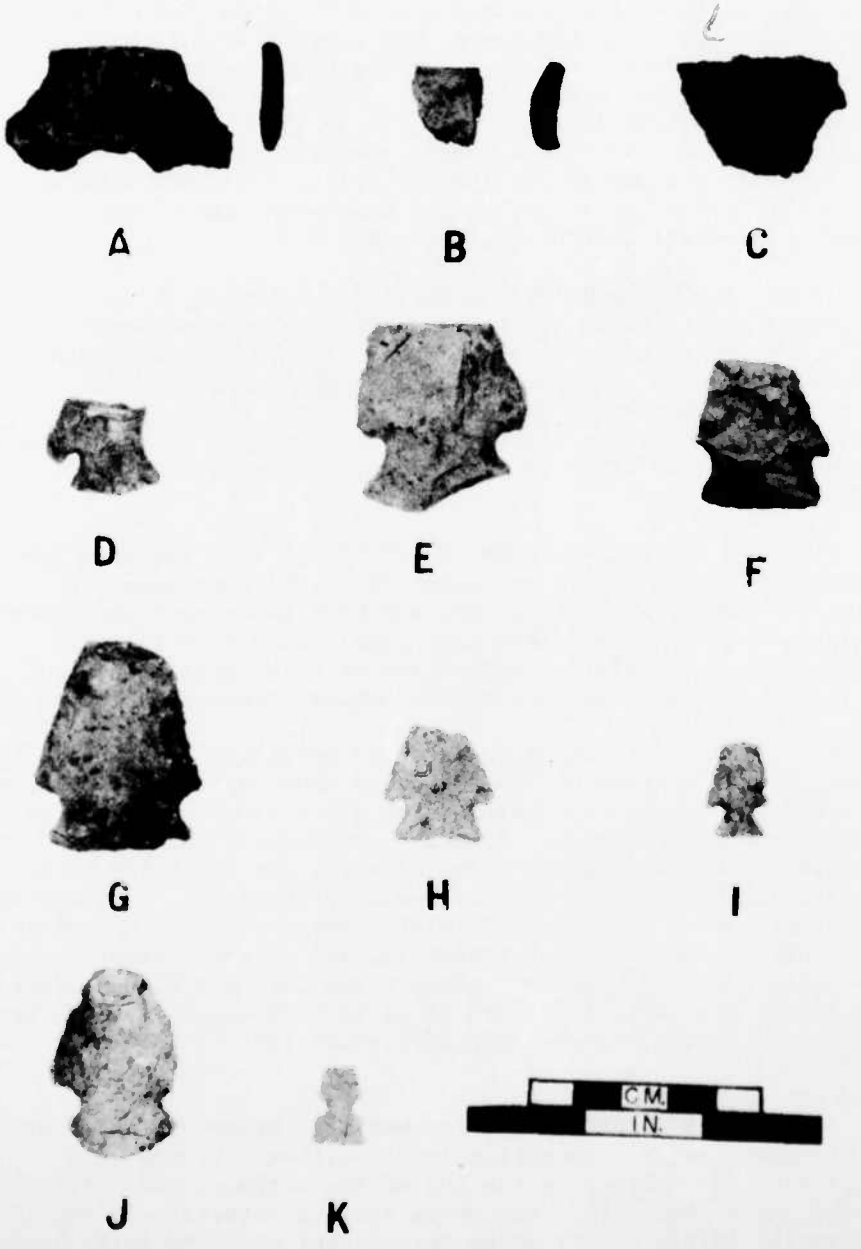

PLATE 5. 14MY302, surface material collected prior to 1978.

PLATE 6. 14MY302, 1978 investigations.
View to south across Area 781.

Because of the horizontal extent of the site along the top of the terrace, the surface of 14MY302 was divided into two separate areas of collection and excavation. Area 781 included the majority of the observed concentrations of surface material and occupied the southern two-thirds of the site. Area 782 included one small concentration of material at the northern end of the site.

Stratigraphy

A simple series of three basic strata were observed in the tests made at 14MY302. From the ground surface to a depth of from 10 to 17 cm lay a pale brown (10YR 6/3) silty clay loam which contained light cultural debris consisting of chert flakes and flecks of burned earth. Immediately below this stratum and extending to a depth of from 20 to 33 cm lay a dark grayish

brown (10YR 4/2) silty clay which also contained cultural material. It is possible that the color difference between the silty clay loam and the underlying silty clay is simply a reflection of greater moisture in the subsoil, and this might explain the shallow depth of contact between the cultivation zone and the underlying soil noted in several of the tests. Finally, the underlying sterile subsoil was found to be a very dark grayish brown (10YR 3/2) clay which was observed at 20 to 33 cm below the surface. While there was a slight color difference between the sterile subsoil and the overlying silty clay, the primary identifying criterion of the sterile clay was the lack of cultural material, specifically the absence of flecks of burned earth.

Although the contacts between the three levels varied in depth across the site, there was no stratigraphic evidence observed to support the multiple occupations suggested by the surface material collected at the site. While it is possible that the earlier and later components did not overlap vertically in the areas tested, the specific multiple occupations may simply not have been indicated in the general cultural level identified in the uppermost and intermediate strata.

Area 781

Surface material collected in Area 781 was relatively abundant in regard to chert flaking debris but did not include ceramic material and was in fact quite limited in diagnostic artifacts. Included in the collection were a number of thermally altered chert biface sections representing projectile points or knives and one blade and stem section of a serrated corner-notched and expanding stemmed Scallorn projectile point (Plate 7,A). Also collected from the surface was the poll of a ground stone ax or celt (Plate 7,B). Manufactured from a fine-grained reddish quartzite, the specimen is symmetrically ovate in cross section and is well made. There is essentially no battering present, although several plow marks are visible on one side. Finally, a sizable chunk of yellow burned clay was recovered which is similar in all respects to the two pieces of daub collected previously from the surface of the site except that it lacks stick or pole impressions.

Eight tests were placed in Area 781 (Figure 8). A 2 m by 5 m trench, X1, was excavated to a depth of 30 cm below the ground surface. One feature, a large cortical chert flake, with opposing convex exterior scraping edges (Plate 7,C), was recovered at a depth of 29 cm, just above the contact with the sterile clay. Excavation Unit 2 was a 2 m by 8 m trench excavated to a depth of 34 cm below the surface near the edge of the terrace. In the cultivation zone, flakes were observed in great quantity in the eastern half of the excavation. However, the examination of the

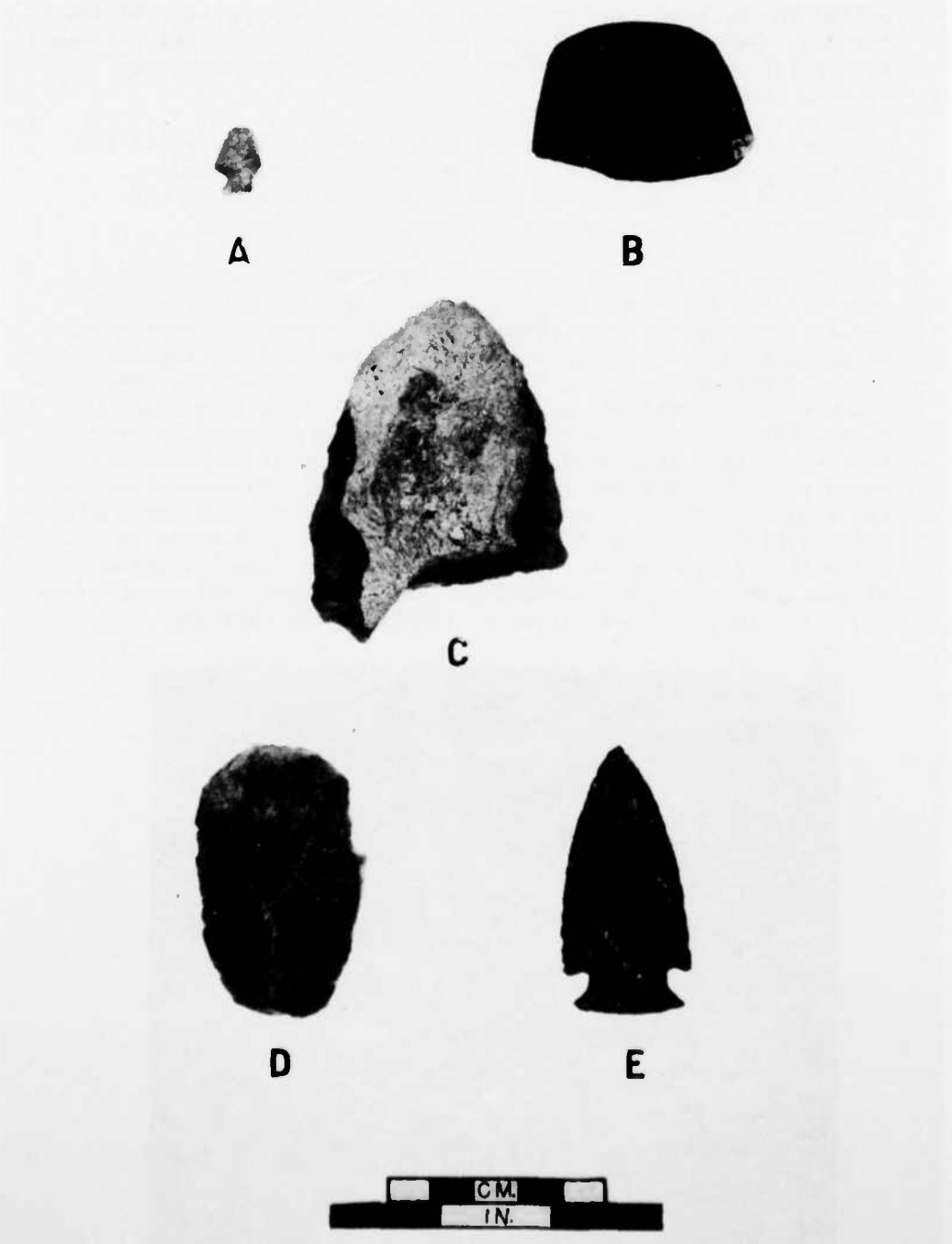

PLATE 7. 14MY302, material recovered during the 1978 investigations.

intact subsurface silty clay intermediate stratum revealed that in situ lithic material was concentrated at the extreme western end of the trench. This suggests that cultural material is being pulled to the east by farming and by erosion at the edge of the terrace. Two features, a chert end scraper and a corner-notched dart point, were recovered from a depth of 27 cm below the surface (Plate 7,D-E).

Excavation Unit 3 was a two meter square excavated at the southeastern end of the site. The unit contained little cultural material and contact with the sterile subsoil was reached at a depth of only 23 cm below the surface.

Excavation Units 4 and 5 were short meter wide trenches excavated at locations where tests with the Oakfield tool indicated the presence of subsurface burned rock. A dark area of mixed soil and burned sandstone and limestone was exposed in the floor of X4 at the 30 cm level. Designated F16, the feature was determined to be a rock hearth lying in a shallow basin-shaped depression (F17) which had been bisected by the test excavation (Plate 8). The determination of function was based upon the differential oxidation of the lithic material in the feature and upon the degree of burning present in the earth fill within and below the rock concentration. The basin in which the hearth lay was approximately 2 m in diameter where it was exposed by the excavation. It was symmetrical in vertical cross section, and was slightly steeper on the east side.

PLATE 8. 14MY302, F16 and F17 in Unit X4.
Hearth filled basin.

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The deepest point in the basin was approximately 55 cm below the ground surface. The rock within the hearth was almost entirely limestone. Charcoal was collected from the fill, as was a small amount of burned and unburned bone and mussel shell.

Excavation Unit 5 was excavated several meters to the south, and exposed a dark circular stain containing cultural material, charcoal, and burned rock at a depth of 26 cm below the surface (Plate 9,A). This feature, designated F8, was 90 cm in maximum dimension where exposed by the trench, and when excavated, it was found to be a basin which contained mussel shell, burned and unburned mammal bone, and fragments of burned sandstone and limestone. Based upon the burned faunal material, the charcoal, and the intense burning of the fill below the rock, the function of the feature would also appear to be that of a hearth. The basin itself was asymmetrical and shallow, extending 19 cm below the initial contact with the dark stain (Plate 9,B).

Excavation Units 6, 9 and 10 were 1 m by 2 m trenches. Excavation Unit 6 was excavated to 30 cm below the surface. No features were recorded there, and only light mixed earth was observed. The others, X9 and X10, were placed at the southwestern edge of the surface distribution of cultural material. No features were recorded in these excavations, and the sterile clay subsoil was contacted at a depth of only 20 cm below the surface in X10.

Area 782

Surface material collected in Area 782 included a number of thermally altered chert flakes, although no diagnostic artifacts were recovered. Two 1 m by 2 m test excavations, X7 and X8, were placed in the area of the surface material noted in this location. Work in X7 identified the same stratigraphic sequence observed to the south in Area 781, and the sterile clay was contacted at a depth of 33 cm below the ground surface. Excavation in X8 exposed the sterile clay at a depth of 27 cm. Neither excavation unit contained diagnostic or featured artifactual remains, and the amount of mix and burning noted in the cultural levels of the Area 782 tests was quite light.

Description of Artifacts

Area 781

Chipped Stone Tools

The keeled end scraper recovered at the 27 cm level in X2 has been manufactured on a thick flake of thermally altered pink

PLATE 9a. 14MY302, Unit X5, F8. Hearth-filled basin exposed.

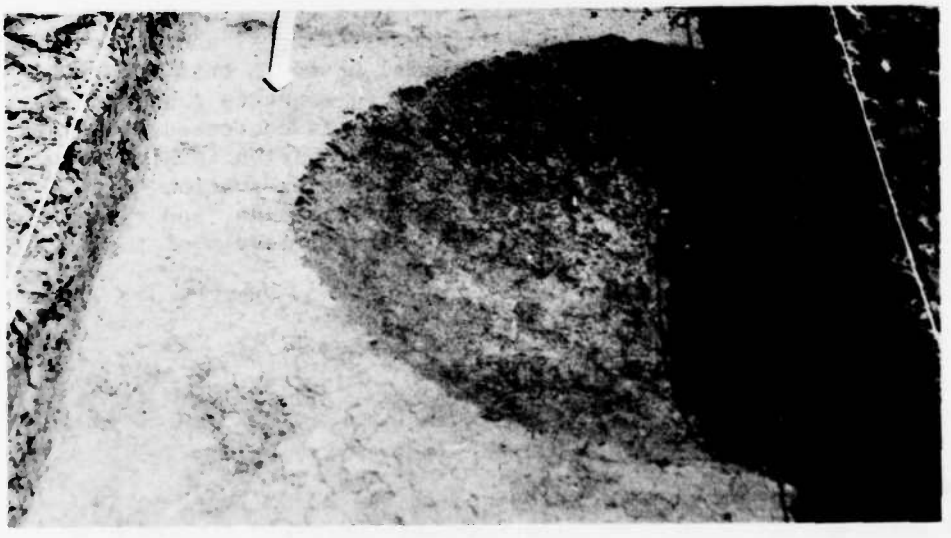

PLATE 9b. 14MY302, Unit X5, F8 cored.

and gray colored chert (Plate 7,D). All retouch on the scraper is exterior. The primary working edge of the artifact is strongly convex in plan view and is also quite steep, retaining evidence of secondary retouch or resharpening which has increased the angle of the edge. There is unifacial edge polish on ridges between the flake scars on the working edge. Although the other edges of the flake have been unifacially retouched, one lateral edge shows heavy bifacial edge wear; the lateral edge opposite has an asymmetrical notch which extends back from the primary working edge for a distance of 18 cm. The specimen is 63 mm long, 40 mm in maximum width, and 20 mm in maximum thickness.

The double edged scraper found in X1 has been manufactured on a large flake of gray and tan chert (Plate 7,C). Much of the flake exterior is cortical; however, two long convex sides have been unifacially retouched into sinuous working edges which show heavy exterior unifacial edge wear as well as bifacial edge polish. The flake has snapped at one end, but the broken edge has light unifacial utilization retouch. The flake is 81 mm long, 59 mm in maximum width, and 20 mm thick.

The specimen from X2 was the only projectile point recovered from the excavated tests (Plate 7,E). It is a large corner-notched gray colored chert dart point with slightly convex blade edges, a stem which expands rapidly to the projected dimensions of the blade, and a slightly convex base. Barbs and tangs are still distinct on this point, which is thin and quite well made. The specimen is probably most representative of the Marcos stylistic type (Bell 1958), a type previously associated with Middle Woodland occupations in the Elk City lake area (Marshall 1972). The point is 61 mm long, 30 mm wide, and 7 mm thick.

Faunal Remains

A number of splintered and incomplete bone sections were found in the fill of F8 and F17, the hearth filled basins in X5 and X4. The material appears entirely mammalian. Three sections, an incomplete lumbar vertebra, an incomplete humerus, and a metacarpal, appear to be from one or more large mammals, probably deer. Although mussel shell was also observed and collected in the areas of the two hearths, a species identification cannot be made due to the fragmented nature of the material and the lack of dorsal margins and hinges.

Conclusions

The 1978 test excavations at 14MY302 did not identify the multiple components suggested by surface material previously

collected at the site, but rather indicated that an intact subsurface archeological stratum exists there which contains the remnants of a possible Middle Woodland occupation. It should be emphasized that only one diagnostic artifact, a corner-notched dart point, was recovered in the cultural level. Clay-tempered, cord-roughened ceramic material was present in the surface collection from the site but was not found in the test excavations.

It may therefore be somewhat premature to place 14MY302 in the Cuesta phase, the Early Ceramic manifestation predominant elsewhere in the Elk City lake vicinity, for no truly diagnostic Cuesta phase artifactual remains have yet been recovered from the site. While the small Huffaker projectile point, the cord-roughened, clay-tempered pottery, and the stick-impressed daub may be indicative of a second, Middle Ceramic component, it is possible that 14MY302 represents a single component site transitional between Middle Woodland (Cuesta phase) and a later cultural entity.

Perhaps the most important data collected during the recent investigations related to F8 and F16, the two features which have been interpreted as hearths. Both contained charcoal, burned earth, and burned faunal remains, and suggested in situ burning. Cultural features similar to these have previously been identified at 14MY305, the Infinity site, six miles downstream along the Elk river (Marshall 1972:33-39) as well as in the Big Hill lake basin approximately 32 km to the east (Figure 1). At the Infinity site, Marshall reported that several concentrations of burned rock were found associated with the interiors of Cuesta phase structures. Specifically, some of these stone concentrations were intensely burned but lacked charcoal and fired earth, and it was interpreted that these stones were heated elsewhere and then transferred to the hearths within the houses (Marshall 1972:225). The occasional proximity of these hearths to the exterior walls of the structures was also interpreted as indicative of firing outside the structures.

The 1973 excavations in the area of Cuesta phase structures along Big Hill creek exposed clusters of burned rocks on house floors, and these interior features were similarly absent of charcoal and burned earth (Rowlison 1980). However, burned rock concentrations with attendant charcoal, ash, and burned earth were found during the 1978 investigations outside the structures, where they were interpreted as indicating open fires (Rowlison 1980). These exterior fires may be the source of the fire reddened stone complexes within the houses. F8 and F16 at 14MY302 appear to represent such exterior hearths, and are probably associated with house remains elsewhere at the site.

At 14MY305, considered to be a major nucleated Cuesta phase village, house remains were identified in the vicinity of a large,

perhaps central, midden mound. However, Cuesta remains in the Big Hill basin suggest a different settlement pattern, that of an "extended" rather than a nucleated series of habitation along the edges of stream terraces. In the investigations at Big Hill, Cuesta phase house floors have frequently been discovered beneath low mounds, with associated nearby areas of scattered sheet trash on the slopes of the terraces. Although distinct mounds were not observed during the 1978 work at 14MY302, the site location and the relatively abundant surface debris atop the terrace and along its slope appear similar to that of the Big Hill Cuesta phase sites. Should 14MY302 ultimately be shown to belong to the Cuesta phase, it is therefore possible that extended Cuesta phase villages are also present along Elk river some distance from the large village site at 14MY305.

Recommendations

Investigations in Area 781 at 14MY302 indicated the presence of an intact subsurface archeological stratum along the edge of a terrace adjacent to Elk river. In situ artifactual remains were featured in X1 and X2, and features interpreted as hearths exterior to possible house remains were noted in X4 and X5, excavation units over 30 meters apart. It is quite likely that structural remains are present in Area 781. However, investigations in Area 782 produced less cultural material, and it would seem unlikely that structures are present there.

14MY302 would thus have considerable potential to provide data regarding Middle Woodland and/or Middle Ceramic occupations in southeastern Kansas. The site is currently under cultivation, a condition which will continue to expose cultural material to erosion and local collecting or vandalism. However, active erosion is not as evident at 14MY302 as it was at 14MY342, and the site lies just above the 825 feet contour, generally avoiding periodic inundation during flood control operations downstream. It therefore does not appear to be immediately endangered by the fluctuating lake level.

14MY302 may represent an alternative Woodland settlement pattern in an area in which one large nucleated Cuesta phase site is already known. However, until an evaluation of the remaining identified sites in the Elk City lake area has been completed, it would seem improvident to recommend additional intensive investigations at 14MY302. It is therefore suggested that the site area be removed from lease as cultivated land and planted in grass or allowed to return to volunteer vegetation. Such action would effectively eliminate the threat of destruction of the site by farming while controlling erosion and vandalism, and would constitute effective interim conservation. Should additional sites be identified which duplicate the features and conditions found at 14MY302, the site

would be a good selection for additional research to clarify the archeological sequence identified by Marshall in the Elk City lake area.

14MY1310

14MY1310, a rock shelter, lies in the massive laminated Piqua limestone, a member of the Wilson formation which outcrops along much of the northern shore of Elk City lake (Schraeder and Haworth 1906). Initially found by Ernest Carr, the site was formally recorded in February, 1975 by Witty. The shelter lies in the eastern side of a large lobed outcrop (Plate 10). It is slightly over 16 m wide and extends approximately 3.5 m back under an overhang, the lip of which is 4 m above the ground surface in the center of the shelter. The fill within the shelter is fine grained soil heavily interspersed with limestone cobbles and boulders, all of which appear to represent material fallen from the roof of the shelter. The shelter floor slopes gently out and down from the base of the overhang to just beyond the drip line of the roof, at which point the ground surface slopes more steeply down to the east toward the floodplain of Elk river. The river itself is presently 100 m southeast of the shelter, although meander scars suggest that it has previously flowed quite close to the base of the outcrop. That portion of the lake shore where the site lies is presently covered with brush, and several species of young trees have taken root in the limestone in and around the site. The upland edge above the outcrop has a sparse cover of grass and is currently used for pasture.

Cultural material collected from the surface of the site prior to the 1978 investigations consisted of one pottery body sherd, three mussel shell sections, a mammal long bone section, and a deciduous pig molar. The sherd is tempered sparsely with small pieces of limestone and indurated clay, and appears to have a smoothed over cord-roughened exterior surface. The interior of the sherd has a short shallow gouge mark which appears to have been a by-product of scraping or smoothing. The specimen is light gray in exterior color (2.5Y 7/2) and black on its interior face, and it is 7 mm thick.

Stylistically similar cord-roughened limestone and clay-tempered ceramics have been recovered at 14GR301 in the Upper Verdigris watershed of east central Kansas, where they have been designated the Verdigris type, originally described as a variant of the Harlan Cord-Roughened pottery type which is diagnostic of the Keith focus, a Plains Woodland cultural manifestation (Calabrese 1967:58-60, 80-82). Later considerations have this type now reclassified as a pottery type in the Greenwood phase (Witty 1980). The cultural level at 14GR301 which contained the Greenwood phase pottery was radiocarbon dated at A.D. 380 $\pm$

PLATE 10. 14MY1310, view to approximate north.

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Plate 10 and Plate 11 on page 93 have been reversed.

PLATE 11. 14MY1310, view from lip of overhang down on to test excavations.

240, and appeared to represent a small habitation with the remains of two houses and a burial complex.

Much of the floor of the shelter was covered with boulder sized roof fall. However, it was possible to establish a single meter wide test trench which avoided contact with the massive pieces of limestone on the ground surface. This excavation extended from the back floor of the shelter approximately 9 m to the east, across the shelter floor and down the slope at the front of the site. Ultimately, eight 1 m squares were excavated in arbitrary levels to varying depths along the trench (Plate 11). The excavations were severely restricted by the heavy roof fall. Several large pieces of limestone extended across the excavation into both trench walls. Because of the nature of the testing and the limited time available for the work at 14MY1310, these were not broken up or otherwise removed but were left in place and worked around.

Stratigraphy

There was no vertical soil stratigraphy observed in the course of the test excavations at 14MY1310, and the fill of the shelter deposits consisted of a homogeneous dark gray silt loam within the limestone roof fall. Many of the pieces of limestone consisted of sloping plate-like slabs lying with their eastern edges below the horizontal (Plate 12), a condition which suggested that their presence was entirely natural and that they fell or were otherwise deposited on a surface which sloped to the east much as it does now. The only change in soil color was a horizontal one which occurred at the drip line of the shelter; lighter colored soil was observed beneath the shelter roof and darker soil was observed beyond the drip line. This would appear to relate entirely to differential moisture content and would not seem to have archeological significance, although there may be corresponding differential preservation of faunal material which is dependent upon the sheltered overhang.

A profile of the south wall of the excavation has been presented in Figure 9. Excavations in the shelter floor extended to approximately 85 cm below the ground surface, while testing in the slope of the site did not continue to as great a depth. No occupation surfaces were observed in the course of the work. However, cultural material was recovered in varying quantities from all depths in all excavation units, although more material was found in the units placed in the slope outside the shelter than in those placed in the shelter floor. Small pieces of limestone were occasionally encountered which had been subjected to firing and small pockets of the dry soil fill below the overhang had a color and consistency resembling ash. However, these

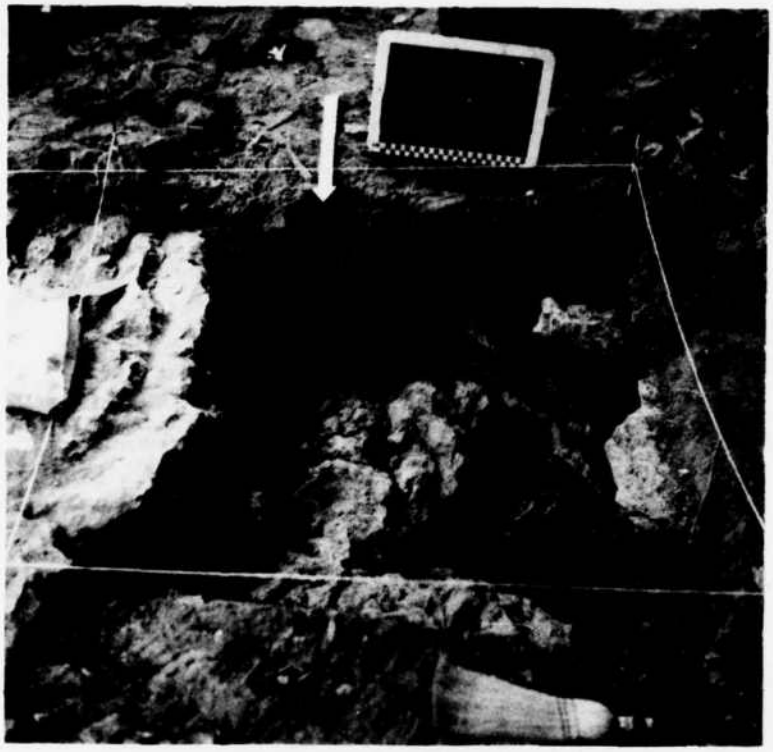

PLATE 12. 14MY1310, overlapping roof fall exposed in X101 and X102.

occurred only sporadically and were of such small size and irregular shape that they did not appear to represent hearths, but rather hearth refuse. The base of the cultural deposits was not reached in any part of the trench in the course of the testing.

Area 781

The 1978 excavations at 14MY1310 were designated Area 781, and consisted of meter squares numbered from 101 at the west end of the trench to 108 at the east end (Figure 9).

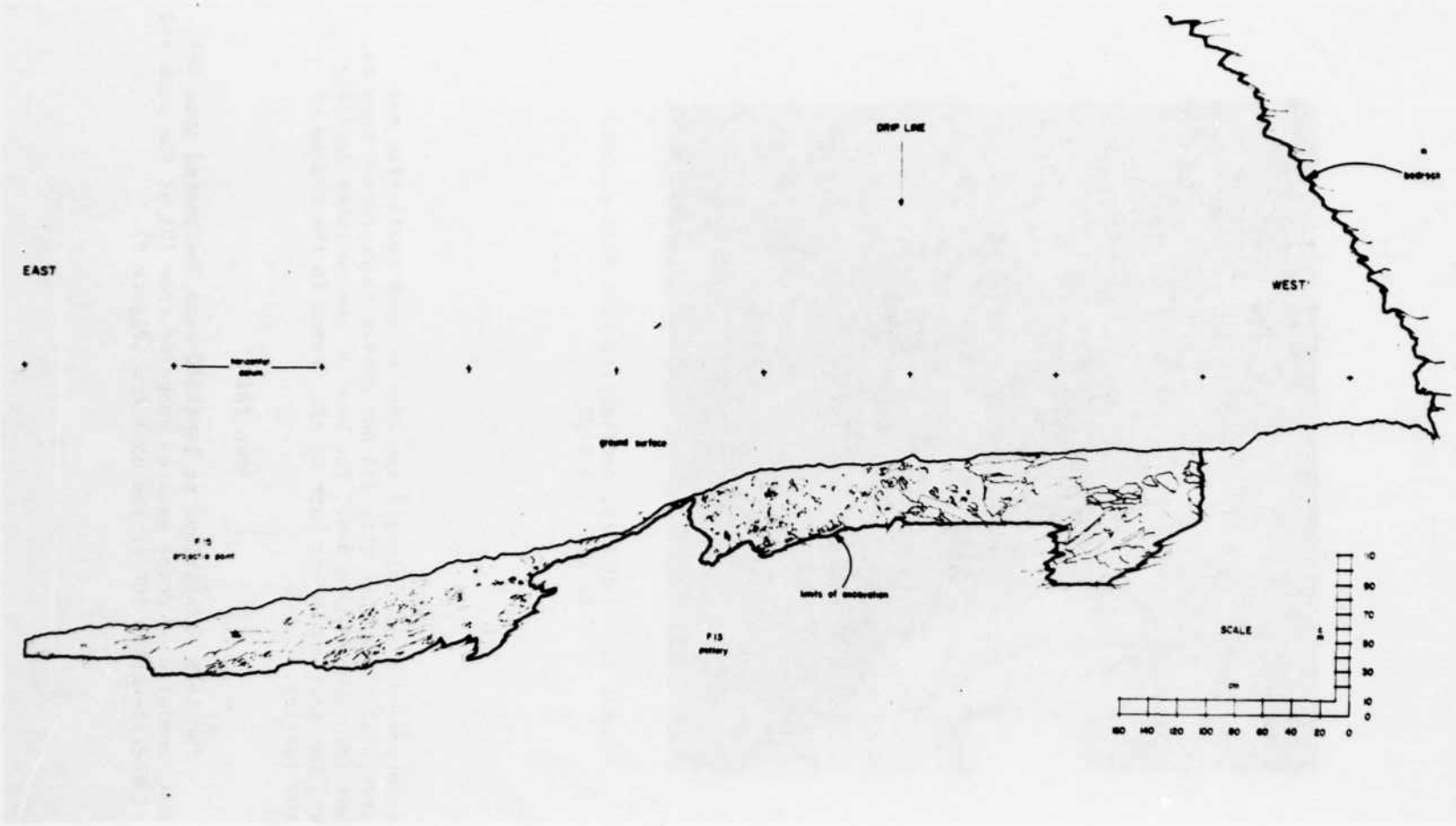

FIGURE 9. 14MY1310, vertical profile of test trench.

Description of Artifacts

Area 781

Ceramics

Twenty sherds recovered during the testing represent a variety of ceramic types. Most predominant in the collection are additional limestone and clay-tempered sherds similar to the earlier typed Verdigris-like sherd in the surface collection from the site. The majority of these have smoothed over cord-roughened exterior surfaces which are light brownish gray (10YR 6/2) or very dark gray (2.5Y N/3) in exterior color. One sherd still has distinct parallel cord impressions grouped as closely as four rows per centimeter across its exterior surface. Their blackened interior surfaces bear traces of what appear to be multidirectional brush marks, some of which are rather deep. One of the 15 specimens of this type is from the rim of a vessel (Plate 13,A), and is vertical and rounded with a slight exterior lip. This specimen is 8 mm thick. The body sherds range in thickness from 4 to 8 mm and appear to represent at least two vessels. Several sherds are partially or completely covered with a light tan coating of material which is probably a carbonate from the limestone in the shelter. The Verdigris-like sherds were recovered from 10 cm to 35 cm below the surface in X101, X102, X103, and X104, and from just below the surface in X106 and X107.

Five other sherds are clay-tempered. Four of these have a slightly gritty texture but contain dark particles which appear to be indurated clay or shale. Both the exterior and interior surfaces of these sherds are plain. They are light yellowish brown (2.5Y 6/4) in exterior and interior color, while their cores are a dark gray. The sherds range in thickness from 5 to 8 mm. One rim sherd (Plate 13,B) indicates that the vessel from which it was derived had a slightly constricted neck, a straight rim, and a rounded lip with diagonal tool impressions running down over the outside of the lip. The sherd has a single possibly trailed line running horizontally around its exterior at the approximate junction of the vessel neck and shoulder.

Because of the diagonally slanted impression on the lip of the rim sherd, that specimen and probably the other three clay-tempered sherds most likely represent one or more varieties of Cuesta ware, the designation given by Marshall (1972:49-55) to the distinctive Early Ceramic pottery first identified in the Elk City lake area. Because of the indistinctness of the

trailed line on its exterior, the rim sherd may well be placed with the decorated lip variety of Cuesta Plain ware. The three Plain body sherds may also be Cuesta Plain ware or they may be from undecorated parts of other Cuesta decorated ware vessels.

Finally, one clay-tempered sherd retains evidence of a decorated exterior surface (Plate 13,C). This sherd, designated F13 in Figure 9, bears a design formed by segments of five parallel lines of dentate stamping which intersect a sixth line of similar manufacture at an angle of approximately 45 degrees. The lines, probably formed by a roulette, have five indented impressions per centimeter of linear design. The specimen is quite soft and eroded, and although the interior surface appears to have been brushed, this can no longer be clearly determined. The sherd is basically black in color and is 9 mm thick. It would appear to represent the dentate stamped variety of Cuesta Decorated ware.

Chipped Stone Tools

Four diagnostic chipped stone projectile points were recovered in the course of the 1978 investigations at 14MY1310. Two of these (Plate 13,D-E) appear to be basal sections of small plain triangular gray chert arrow points similar to the Fresno stylistic type (Bell 1960). Both are thin and well made, and were recovered from high in the fill in X106 and X107 near the eastern toe of the shelter deposits. They are characteristic of later Ceramic occupations in southeastern Kansas.

Another specimen is the contracting stem from a medium-sized light gray chert dart point (Plate 13,F). Broken at the blade and at the base, the stem has light bifacial polish on the ridges between its flake scars, and would appear to represent either the Gary or the Langtry stylistic type (Bell 1958). This artifact was found on the ground surface in the area of the shelter, and would typically be associated with an Early Ceramic period occupation.

Finally, one large broad bladed projectile was recovered (Plate 13,G). Designated F15 in the profile illustrated in Figure 9, this dark gray chert specimen has strongly convex blade edges and small corner notches, and bears evidence of heavy bifacial edge wear. It is broken at the stem, but measures 38 mm in maximum width across the blade. The point most closely resembles the Marcos stylistic type (Bell 1958), one usually associated locally with an Early Ceramic or Middle Woodland occupation. It was recovered from a depth of 17 cm below the ground surface in X107, stratigraphically below the Fresno point bases.

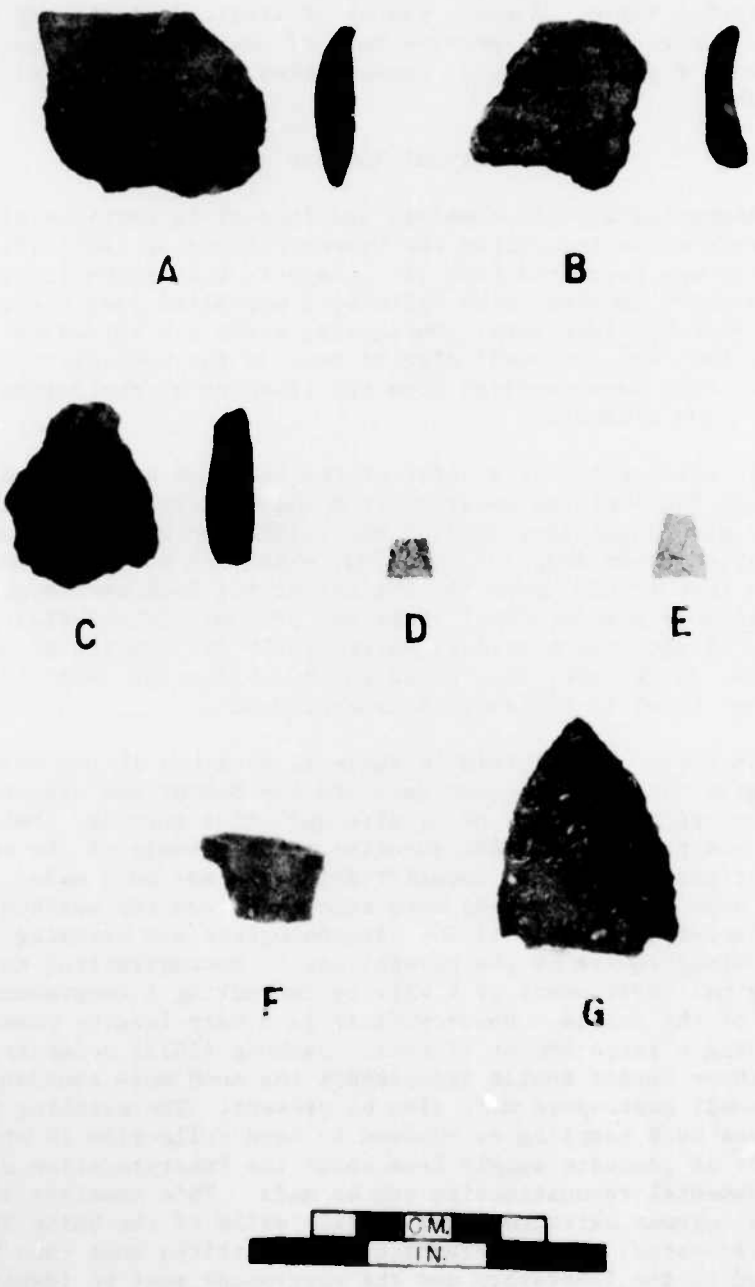

PLATE 13. 14MY1310, artifacts.

A limited number of chipped stone tool fragments were also recovered, including a convex working edge from a chert end scraper and a blade section from a medium-sized projectile point or bifacial knife. A small amount of lithic debitage was present in the excavated fill, perhaps half of which had been thermally altered. A small number of these flakes bear evidence of bifacial retouch.

Faunal Remains

Approximately 150 complete and incomplete sections of animal bone were collected during the investigations at 14MY1310. This material was recovered from all levels in the excavations, and the majority appears to be splintered mammalian long bone, much of it probably from deer. Butchering marks are infrequent in the collection, and the small size of many of the bone sections suggest they have resulted from the crushing or shattering of larger bone elements.

Approximately one quarter of the bone has been burned. Although the skeletal material from the eastern excavation units was in good condition, much of the collection was recovered from excavation Units 101, 102, and 103, which lie at the western end of the test trench under the shelter of the rock overhang. It is therefore possible that there may be some differential preservation of skeletal material, particularly the remains of small mammals, which were represented in the collection from X101 but were not found in the eastern excavations.

Analysis of identifiable skeletal elements in the collection indicates that at least two deer and one beaver are present together with a variety of aquatic and other turtles. Mussel shell was present in great quantity in all levels of the shelter excavations. A species identification has not been made. A large number of gastropods were recovered from the surface and test excavations at 14MY1310. Archeologists are becoming increasingly aware of the possibility of reconstructing the aboriginal environment of a site by conducting a comprehensive study of the snails. However, this is a very lengthy process involving a large amount of time. Jaehnig (1971) suggests that when these larger snails are present the much more abundant but very small gastropods will also be present. The sampling process involves bulk sampling as opposed to hand collection in order to extract an adequate sample from which the interpretation of environmental reconstruction can be made. This consists of soil sample columns extracted from profile walls of the units which were excavated. These columns or soil matrices must then be reduced in the laboratory and the gastropods must be identified and counted. Many of the shells are often too small to be found

without the aid of a magnifying device, i.e., 10 power magnifying glass or microscope. Many other factors have to be accounted for, i.e., features of deposition, microhabitats etc. As can be seen, this is a very lengthly process involving a considerable amount of time and was not feasible for this study. However, this process could be applied at a later date.

Conclusions

The data recovered from the 1978 test excavations indicate that 14MY1310 was inhabited by possibly two groups during the Early Ceramic period. The recovered Cuesta ware sherds are quite similar to those located at other Elk City lake sites (Marshall 1972) and also resemble those recovered from the Big Hill lake area (Rowlison 1977). The remaining Early Ceramic occupation is represented by the occurrence of ceramics affiliated with the Greenwood phase (Reynolds 1979:93-96). This Plains Woodland complex has thus far been identified at four excavated sites; the Curry site on the Upper Verdigris river, the Two Dog site at the Council Grove reservoir, the Cow Killer site at Melvern reservoir and the Gilligan site in the John Redmond reservoir. The regional distribution of the Greenwood phase includes portions of the east central part of Kansas in the Osage, Verdigris, Marais des Cygnes and Neosho drainages.

The recovered projectile points suggest an Early Ceramic period occupation and possibly a later utilization of the shelter. The contracting stemmed variety and the Marcos stylistic type are both associated with the Early Ceramic period in the Elk City area. The two small plain triangular points are normally associated with the later Middle Ceramic period occupations; however, they have also been identified at Cuesta phase habitation sites in the Big Hill lake area (Rowlison 1979).

Recommendations

Site 14MY1310 appears to be well preserved at the present time. There was no erosion taking place at the time of the 1978 investigations and the site appears to be protected by the abundant roof fall from the shelter. The continued preservation of 14MY1310 appears to be the likely alternative at the present time.

14MY1349

14MY1349 lies on the west side of a terrace which extends in a north to south direction out into the lake. The site is within a camping area of the Elk City Lake State Park. A blacktop

road crosses the site in an approximate north to south direction. At the time of its recording in 1978, Carr collected and/or observed both burned and unburned limestone and sandstone, a small quantity of chert chips and flakes, a large sandstone muller and a few chipped stone tools. The site extends for 90 m north to south and 30 m east to west.

The chipped stone tools recovered from the surface of 14MY1349 were suggestive of either an Early or Middle Ceramic occupation, or possibly both. The diagnostic projectile points include both the Fresno and Scallorn stylistic types (Bell 1958, 1960) as well as three small corner-notched triangular points with expanding stems. An end scraper fragment and the tip of a medium-sized bifacial blade were also recovered from the surface of the site.

The terrace on which 14MY1349 lies slopes downward from south to north with approximately 2 m difference between the south and north ends of the site. At the time of the 1978 test excavations, the site was covered with a thin stand of trees and a few structures relating to a camping facility were also present. The site was divided into two areas, 782 (north) and 781 (south) for purposes of control.

Stratigraphy

The stratigraphy present at 14MY1349 represented two distinct strata, the uppermost of which was a dark gray (10YR 4/1) to dark gray brown (10YR 4/2) silty clay which varied in depth from 6-14 cm. Beneath this stratum was a yellow brown (10YR 5/6) clay zone which appeared to represent the sterile subsoil. The excavations normally ceased at the 15 cm level with the exception of two units which were excavated an additional 8 cm to investigate the sterile clay level.

Cultural material consisting of pottery sherds, fresh water mussel shells, chert chips and flakes, a few pieces of ground hematite, and one utilized flake were recovered in the uppermost strata. No cultural materials were located in the yellow brown clay zone.

Area 782

Area 782 was the first area investigated. It was in the northern portion of the site on the top and western slope of the terrace on which 14MY1349 lies. This area is approximately 60 m wide and is on both sides of an existing blacktop road. Ultimately, seven test excavations, numbered X1 through X7, were placed in Area 782. Excavations proceeded by hand digging an arbitrary 15 cm level.

The first test, X1, was a 1 x 2 m unit, dug to a depth of 23 cm below the ground surface. The test was placed in a concentration of lightly burned limestone lying unconsolidated on the surface of the site. Cultural material including a small quantity of chert chips, two mussel shells and one bone fragment lay primarily in the rock, but not below it. The sterile yellow brown clay subsoil was encountered at 15 cm below the ground surface. The unit was taken down an additional 8 cm to investigate the clay subsoil. No cultural materials or features were identified in this soil zone.

Excavation Unit 2 was also a 1 x 2 m trench excavated in the west side of the site where the terrace slopes down towards the water's edge. No features were recorded and very little cultural material was recovered. The yellow brown sterile clay was located at 9 cm below the ground surface and the unit was further excavated to a total depth of 23 cm below the ground surface to investigate the clay zone. Once again, the yellow brown clay zone was devoid of cultural material.

The next unit, X3, was located on the top of a terrace in the approximate center of Area 782 and was a 1 x 2 m trench excavated to a depth of 15 cm below the surface. The unit contained very little cultural material and no significant features were identified. The uppermost zone contained a very light mix, but the sterile clay lower zone was located at 9 cm below the ground surface. No intact cultural zone was identified in Unit X3.

Excavation Unit 4 was a 1 x 2 m unit placed a short distance south and west of X3. Excavated to a depth of 15 cm below the ground surface, the test encountered a concentration of pottery sherds immediately below the ground surface. This feature, designated F7, consisted of approximately 70 sherds which were found lying both flat and on edge and probably represents two or more vessels. F7 was located from 6-10 cm below the surface. Immediately below this, the sterile subsoil was reached and the excavation was closed at 15 cm below the surface.

Units X5 through X7 were all 1 m square excavations placed in the southern portion of Area 782. All three units were excavated to a depth of 15 cm and the sterile clay subsoil was encountered between 7-9 cm below the ground surface. Very little cultural material was located except for a few small chert chips in the uppermost soil zone. One artifact, a flake tool designated F12, was located 6 cm below the ground surface in X7.

Area 781

Area 781 was the designator given to the southern portion of 14MY1349 which contained a consolidated group of sandstone and limestone cobbles which were exposed on the surface of the site.

Excavation Unit 8 was a 1 x 2 m trench excavated to a depth of 15 cm to investigate this concentration of materials. This feature, designated F18, appeared to represent a recent fire pit excavated into the ground surface of Area 781. A series of sandstone and limestone cobbles and slabs had been placed in an excavated pit. The sterile clay subsoil was encountered at 6 cm below the surface. A small amount of chert chips were located in the uppermost zone, but no significant archeological materials or features were encountered in this unit. The unit was excavated to a depth of 15 cm below the surface to further investigate the sterile clay zone.

Description of Artifacts

Area 782

Ceramics

The pottery sherds recovered from X4 appeared to represent two or more vessels. The interior and exterior surfaces range from a grayish brown (10YR 5/2) to brown (10YR 5/3) color and encrusted soot is present on the majority of the exterior surfaces. The surfaces are smooth and a few sherds bear evidence of smoothed over cord-roughening. All of the sherds have sand temper and range in thickness from 4-8 mm with the average being about 5 mm. The vessel shape represents small to medium-sized globular jars with a straight to slightly outcurving rim. The rim is thinned slightly and the lip is rounded. No decorations were noted on any of the recovered specimens.

Chipped Stone Tools

One flake tool was recovered from Unit X7 in Area 782. This tool consists of a medium-sized leaf-shaped chert flake measuring 47 mm long by 26 mm wide and approximately 5 mm thick. The flake has evidence of partial retouch and wear along its interior lateral edges. The tool was recovered from the uppermost zone of the excavation at 6 cm below the ground surface.

Faunal Remains

Two fresh water mussel shells were recovered from the uppermost zone of Unit X1. Although a detailed anlaysis of the shell was not undertaken, they appear to represent *Quadrula postulosa*, a unionid species found throughout eastern Kansas south of the Kansas river.

Conclusions

The fluctuating lake level in the vicinity of 14MY1349 has created a considerable amount of erosion in this area. Jones discussed this phenomena with park personnel and they reported that 14MY1349 has been inundated perhaps 30 times since the impoundment of the Elk City lake. This has resulted in the removal of a large amount of topsoil and has caused a considerable amount of erosion to the site. This accounts for the remnants of the thin layer of silty loam which overlies the sterile clay subsoil.

To assign a cultural affiliation to 14MY1349, we must evaluate both the surface material and the data recovered from the 1978 test excavations. As was previously stated, the chipped stone tools recovered from the surface of the site suggested either an Early or Middle Ceramic cultural affiliation, or possibly both. The test excavations, which resulted in the location of a concentration of pottery sherds, suggests a Middle Ceramic occupation for the site. However, no distinct intact cultural stratum, which is capable of yielding significant archeological data was identified during Jones' investigation. It appears that the fluctuating lake level has fairly well removed the archeological potential of the site and only the remnants of a probable Middle Ceramic occupation still exists at 14MY1349.

Recommendations

Due to the erosion which has taken place at 14MY1349, the site no longer appears to bear potential of yielding significant archeological information. Although the site still contains the remnants of a Middle Ceramic occupation, no distinct stratum was identified which would further enhance our knowledge of the Middle Ceramic period in the Elk City lake locality. It is therefore recommended that no additional archeological work be conducted at 14MY1349. However, should earth modifying activities be planned for this location, the work should be monitored for cultural materials and/or isolated features which might be present.

14MY334

Site 14MY334 was originally reported by Carr in 1964 as being situated on a low terrace which is located in a large bend of the Elk river. This area is adjacent to the left or north bank of the Elk river and is approximately .4 km north of the 14MY305, the Infinity site. The site is currently within the Oak Ridge Public Use Area and Carr indicated that a portion of the site was destroyed during construction of the facility.

A large amount of artifactual material has been collected from the surface of 14MY334 since its discovery, and these remains indicate a Middle Woodland, Cuesta phase cultural affiliation. The ceramics consist of a small number of clay-tempered pottery sherds, all of which have smooth exterior surfaces. Two rim sherds were recovered and both are decorated. One of these has six vertically incised lines spaced approximately 3-4 mm apart which extend downward from the lip of the rim in a somewhat diagonal direction for approximately 4-10 mm (Plate 14,A). This incised rim appears to represent the Cuesta decorated, smooth stick-impressed variety as described by Marshall (1972: 52-53). The remaining rimsherd probably represents the Cuesta decorated, cord-wrapped stick-impressed variety (Marshall 1972: 54-55). The exterior surface was initially cord-roughened and then smoothed over except for the uppermost portion of the rim where the cord impressions were not obliterated, thus leaving a vertically cord-impressed decoration which extends downward from the lip of the rim for approximately 8 mm. The cord-impressions are approximately 3-4 mm apart (Plate 14,B).

The surface collections include a sizable quantity of chipped stone tools. The projectile points are predominantly the Gary stylistic type (Bell 1958:28-29) and comprise approximately 50% of the collected specimens (Plate 14,C-D). The remaining projectile point inventory includes both the small, expanding stemmed variety which resemble the Scallorn stylistic type (Bell 1960:84-85) (Plate 14,E-F) and the medium to large corner-notched, expanding stemmed variety (Plate 14,G-H).

The chipped stone inventory also includes seven alternately beveled knife fragments, all of which are thermally altered and quite thin, ranging from 6 to 9 mm in thickness (Plate 14,I). None of the specimens are complete and their exact shape is not determinable.

Five scraper fragments and one complete scraper were also located on the surface of 14MY334. The complete specimen is circular in shape with the short stem on the proximal end (Plate 14,J).

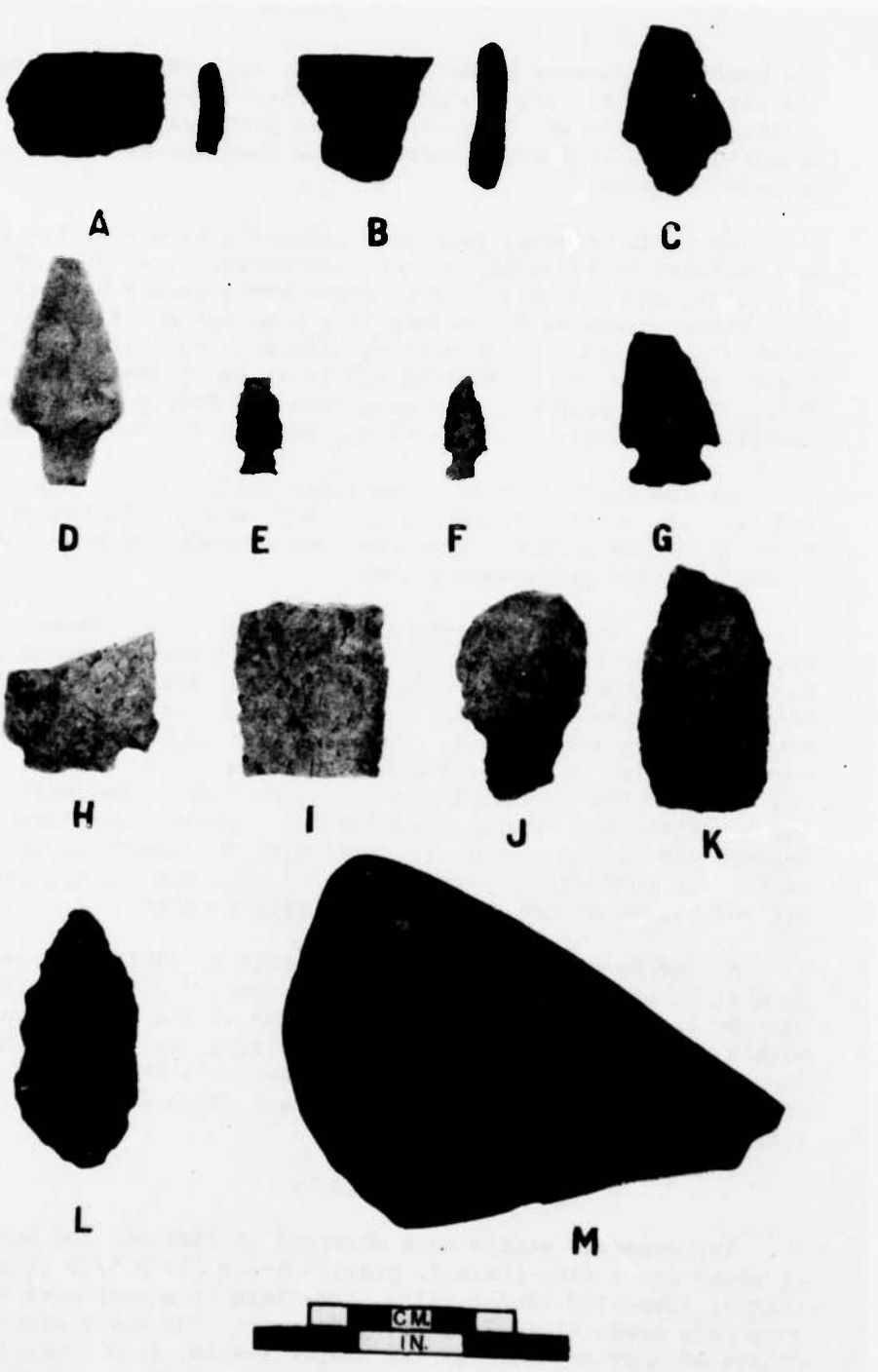

PLATE 14. 14MY334, surface material collected prior to 1978.

The specimen measures 52 mm long and is approximately 32 mm at its widest point. The distal end is sharply beveled and the striking platform still remains on the proximal end. The remaining five fragments represent the remnants of broken end or side scrapers.

Two crude bifaces, fashioned primarily by percussion flaking, are included in the chipped stone inventory. The first of these is oval in shape with excurvate edges and a convex base (Plate 14, K). The specimen is 59 mm long (tip missing) and 11 mm at its thickest location. The remaining biface is roughly diamond shaped and measures 63 mm long and is 17 mm at its thickest point (Plate 14,L). Both of these specimens are fairly crude and display very little evidence of any attempt at pressure flaking.

The remaining chipped stone tools include seven tip sections and five mid section fragments from well made, thin biface blades. These fragments probably represent the remnants of broken small to medium-sized projectile points.

Finally, three fragments fashioned out of siltstone were recovered from the surface of 14MY334. All three have at least one smooth, tapered edge. The one specimen (Plate 14,M) closely resembles the siltstone celts which were recovered from the Infinity site (Marshall 1972:81-82). This specimen is 63 mm long, 91 mm across the bit, and is approximately 11 mm thick. The bit end has been smoothed and is tapered on both sides. Marshall (1972:239) has suggested that these siltstone celts resemble in form the Hopewellian copper celts. The remaining two specimens are quite small, but both have a smooth, tapered edge and may represent the bit end of one or two additional siltstone celts.

At the time of the 1978 investigations, 14MY334 lay situated on what is now relatively flat ground covered by grass. Area 781 was the designator given to that portion of the site which lies within a large stand of trees, circumscribed by an oval-shaped asphalt drive. This area also contains men's and women's wooden restroom facilities. Ultimately, 8 test units were excavated to varying depths in Area 781.

Stratigraphy

Two separate strata were observed at 14MY334, the uppermost of which was a fine-grained, grayish brown (10YR 5/2) stratum of lightly compacted banded silts, underlain by a much more compact, very pale brown (10YR 7/3) silty deposit. The lower stratum contained more moisture at its deeper levels, thus producing a darker color which is probably the result of differential dryness and/or compaction of silts.

The uppermost stratum was devoid of cultural material and varied from approximately 12 to 16 cm in depth. The underlying stratum contained a sparse amount of cultural material including chert chips, a small quantity of burned sandstone, one small burned pottery sherd, and one projectile point. The majority of this cultural material was recovered from 40-60 cm below the ground surface.

Area 781

Excavation Units 1 and 3 were 1 m^2 units excavated in Area 781. The former was placed in the eastern portion and was excavated to 90 cm below the ground surface. The latter was placed in the western edge across from X1 and was excavated to 88 cm below the surface. The uppermost stratum in both units was an approximate 12 cm thick, loosely packed zone of banded silts, underlain by the more compact silts. Both excavations contained a light mix consisting of flecks of charcoal and burned earth in the lower stratum. The burned earth feathered out between 45-50 cm below the ground surface and the charcoal flecks extended to the bottom of both units. A small amount of cultural material consisting of a few fragments of burned sandstone, one badly burned potsherd and one chert chip was recovered in the lower stratum at X1. Unit X3 contained a single chert chip located at 50 cm below the surface. No significant artifacts or features were located in either unit.

Excavation Unit 2 was a 1 m^2 test that was placed at the southern end of Area 781 adjacent to the asphalt road which circumscribes the area. The unit was excavated to 38 cm below the ground surface and the uppermost 16 cm consisted of the loosely packed banded silt stratum. Beneath this was the much more compact silty stratum which extended to the bottom of the excavation. No cultural material or features were located in X1; however, flecks of charcoal and small pieces of burned earth were located in the 24-38 cm level.

The next unit, X4, was an approximate 1 m^2 test excavated to a depth of 30 cm. X4 was placed in the northwestern edge of Area 781 in the vicinity of X6. The uppermost stratum of loosely packed banded silts gave way to the lower stratum at approximately 14 cm below the ground surface. The lower stratum contained flecks of charcoal and very small pieces of burned earth, but no features were identified within this lower stratum.

X5 was a 1 m^2 unit placed in the eastern end of Area 781. X5 was excavated to a depth of 82 cm and contained both the loosely

packed upper stratum as well as the more compact lower stratum. One feature, a projectile point, was located 54 cm below the ground surface. A small quantity of burned sandstone and chert chips were also recovered, primarily between 40 and 65 cm below the ground surface. The unit also contained a light mix of charcoal and burned earth within the lower stratum; however, the burned earth feathered out at approximately 48 cm below the surface. Flecks of charcoal were noted throughout the lower stratum and continued to the bottom of the excavation.

Another 1 m^2 test, X6, was placed in the northwestern edge of Area 781 and was excavated to a depth of 53 cm. The uppermost 16 cm consisted of the loosely packed banded silts which were underlain by the more compact silty lower stratum. No cultural material or features were located in X6.

Excavation Unit 7 was a 0.5 m (north-south) by 1 m (east-west) test placed in the southwest portion of Area 781. Once again, two strata were observed, the uppermost of which contained the loosely packed banded silts which were underlain by the much more compact silty stratum. The uppermost stratum was approximately 12 cm deep and was devoid of cultural material. The lower stratum contained a light mix, comprised of flecks of burned earth and charcoal. The burned earth feathered out at 47 cm below the ground surface, but the flecks of charcoal continued to the bottom of the excavation. X7 was excavated to a depth of 75 cm below the surface, but no featurable artifacts or cultural material was recovered.

Finally, a 1 m^2, X8, was placed in the eastern portion of Area 781 and was excavated to a depth of 63 cm. A similar stratigraphic sequence was encountered with the uppermost 16 cm representing the loosely packed banded silt stratum, underlain by the more compact silty stratum which contained the cultural material. Flecks of charcoal and burned earth were encountered in the lower stratum, with the burned earth feathering out at 38 cm below the ground surface and the charcoal continuing to the bottom of the excavation. One small chert flake was encountered at approximately 40 cm below the surface, but no diagnostic materials or features were encountered in the unit.

Description of Artifacts

Area 781

Ceramics

One small, badly burned pottery sherd was recovered in X1 at approximately 42 cm below the ground surface. This specimen

is quite small and appears to represent a body sherd, tempered with indurated clay or shale. The exterior surface is very weathered and difficult to analyze, but it may possibly have been cord-roughened. The specimen is 5 mm thick.

Chipped Stone Tools

One projectile point, F6, was located 54 cm below the ground surface in Unit X5. This specimen is a medium-sized triangular-shaped dart point, with deep corner-notches, and a rapidly expanding stem with a slightly convex base. A small portion of the tip (circa 5-7 mm) has been broken off. The specimen measures 32 mm long and is approximately 8 mm thick.

Conclusions

The 1978 test excavations at 14MY334 indicated that an intact, subsurface archeological stratum exists there which contains the remnants of a Middle Woodland occupation. The majority of the cultural debris occurs primarily in the 40-60 cm level below the ground surface. Although there was not a clear cultural zone apparent in the vertical profiles of the excavation units, there was a light mix including flecks of charcoal and small pieces of burned earth which occur throughout this level. It should be noted that only one diagnostic artifact, a corner-notched dart point was recovered in the cultural level; however, this artifact, when added to the recovered surface specimens, indicates a Middle Woodland occupation which is quite similar to the Cuesta phase components located elsewhere in the Elk City lake locality.

As was previously mentioned, Carr visited this area prior to the construction of the camping facility and he indicated that a portion of the site had been destroyed during construction activity. However, it appears that a sizable portion of 14MY334 is still intact.

14MY334 is extremely close to the Infinity site and the surface material suggests a relationship between these two sites. However, there was no evidence located during the test excavations to either support or deny this.

Recommendation

14MY334 appears to be well preserved at the present time. There was no erosion taking place at the time of the 1978 investigations and the site appears to be well protected by the overburden and grass cover. The continued preservation of 14MY334 appears to

be the likely alternative at the present time. However, any further earth displacement for the Public Use Area must consider the adverse effects which these actions may have upon this identified resource.

14MY350

Carr identified this site when the lake level was lowered in 1972. Witty recorded 14MY350 as being situated on the northeast slope of a low upland terrace which extends downward towards the edge of the lake. Prior to the inundation of the Elk river valley, 14MY350 lay adjacent to the left or west bank of Squaw creek, a short distance south of its confluence with the Elk river. The fluctuating lake level had caused a considerable amount of erosion and Witty observed a large concentration of burned and unburned sandstone exposed on the surface of the slope.

The lake level was higher during the 1978 investigations and Jones described 14MY350 as now being situated on a large lobed point of land which extends out into the lake on its southern edge. The water is quite shallow in this area and a portion of the northern edge of the site was inundated by the lake. Jones also observed two sandstone concentrations, one circular and the other rectangular, on the north end of the site.

A sizable quantity of chipped stone artifacts was recovered from the surface of 14MY350 since its discovery and indicate an Archaic cultural affiliation along with a possible later utilization of the area. The projectile points include medium-sized triangular to ovate shaped blades with relatively straight stems and bases (Plate 15,A-D) and triangular shaped specimens with expanding stems and concave bases which produce rather wide, shallow side notches (Plate 15,E-H). One lanceolate shaped specimen with a convex base was also recovered from the surface of 14MY350 (Plate 15,I). Two other specimens appear to represent larger projectile points which were broken and then refashioned into smaller tools. These two specimens have very large bases in relationship to the overall length of the tool (Plate 15,J-K). Finally, two small arrow points which represent the Scallorn stylistic type (Bell 1960:84-85), were recovered from the surface of the site (Plate 15,L). The Scallorn point is normally found in association with Early Ceramic period occupations in the Elk City lake locality which may represent an additional, later occupation for 14MY350.

Six end scrapers were recovered from the surface of 14MY350 and can be divided into two separate classes. The first of these

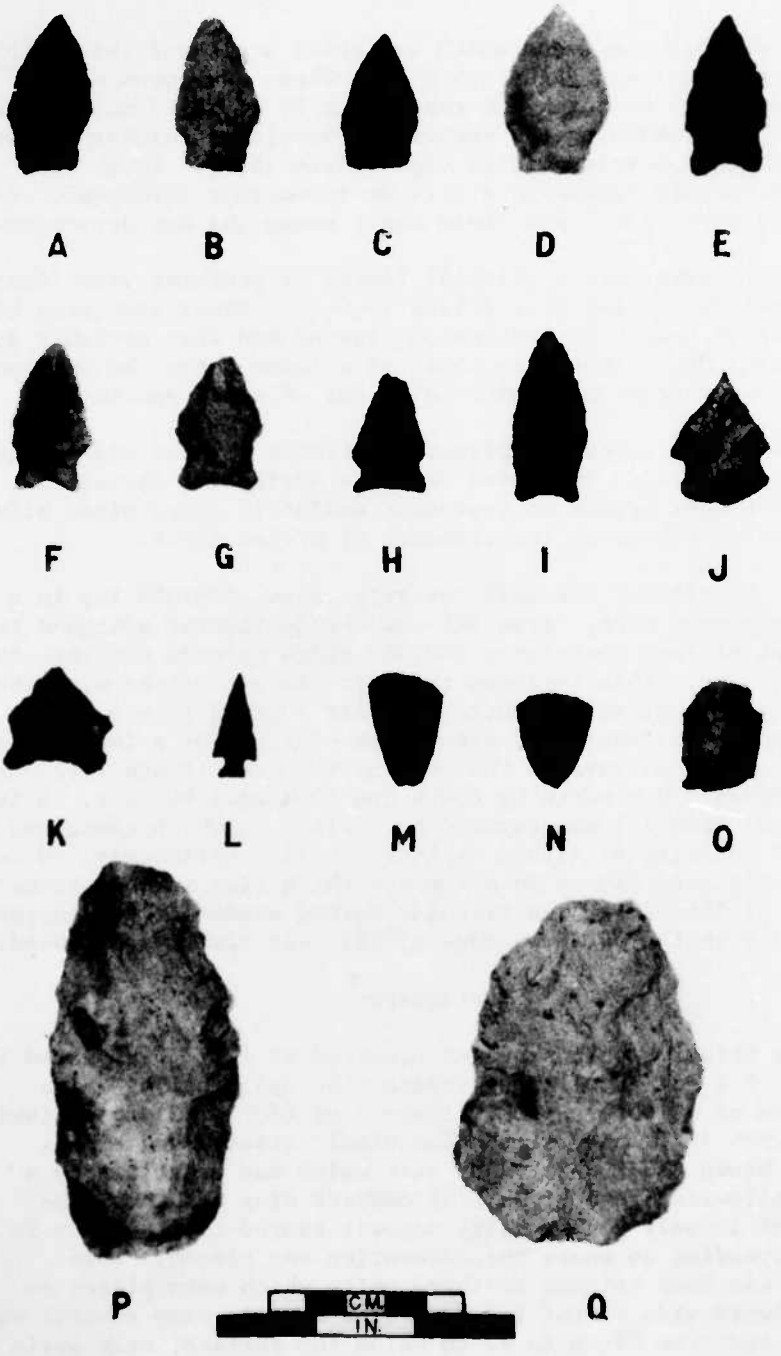

PLATE 15. 14MY350, surface material collected prior to 1978.

consist of four specimens which are quite small and thin with a tapered proximal end (Plate 15,M-N). These specimens are approximately 5 mm thick and range from 24 mm to 29 mm in overall length. The remaining two specimens comprise a thicker variety with a steeply beveled distal edge (Plate 15,O). These two scrapers average approximately 10 mm in maximum thickness. Both specimens were broken and their exact shape was not determinable.

Eight large, crude bifacial flakes or preforms were located on the surface of the site (Plate 15,P-Q). These specimens have been roughly shaped by percussion flaking and were probably going to be fashioned into usable tools at a later date. No evidence of pressure flaking was observed on any of these specimens.

Finally, a number of bifacially flaked tip and mid-section fragments were also recovered from the surface of the site. These specimens appear to represent medium to large sized bifacial blades which represent the remnants of broken tools.

At the time of the 1978 investigations, 14MY350 lay in a relatively open area. Area 781 was the designator assigned to the point of land containing 14MY350 which extends out into the Elk City lake. This includes the northern tip of the site where the burned sandstone concentrations are located (Plate 16) as well as the southern portion of site which consists of a low terrace which slopes down towards the edge of the lake (Plate 17). Area 781 measures 150 m north by south and 60 m east by west. A large portion of Area 781 was covered by a silt fan which contained an abundant quantity of lithic flaking debris. Ultimately, 10 test excavations were placed on a terrace which lies in the southern portion of Area 781. The circular burned sandstone concentration, which lies on the northern edge of 781, was also investigated.

Stratigraphy

The stratigraphic sequence observed at 14MY350 appeared to be that of a series of three strata, the uppermost of which consisted of a loosely packed light gray (10YR 7/2) to a pinkish gray (7.5YR 7/2) sandy silt. The middle stratum was a dark grayish brown (10YR 4/2) sandy silt which was underlain by a light yellowish brown (10YR 6/4) compact clay stratum. The uppermost loosely packed silty deposit ranged from 3-14 cm in depth depending on where the excavation was placed. This deposit was much thicker in those units which were placed on the lakeward side of the terrace. The sterile clay subsoil was encountered from 13 cm to 43 cm below the surface, once again depending on where the excavations were placed. Those placed on the edge of the terrace encountered the clay at a much shallower level in comparison to those placed towards the center of the terrace.

PLATE 16. 14MY350, northern tip of Area 781 View to north.

PLATE 17. 14MY350, southern portion of Area 781. View to east.

Cultural material consisting of lithic flaking debris, burned and unburned sandstone, historic debitage (glass, nails, small insulators, needles, bolts, stoneware, china, barbed wire, and brick fragments) and two tool fragments were located in the uppermost two strata. No cultural material or features were identified in the basal clay stratum. Additionally, the majority of the historic debitage was limited to the uppermost loosely packed silty stratum. There is an old farmstead located a short distance south of 14MY350 at the multi-purpose pool level of the lake which may account for the historic debitage which was encountered at the site.

Area 781

The first test, X1, was a 1 m (north-south) by 2 m (east-west) excavation placed on the center portion of the terrace located at the southern end of Area 781. The uppermost 10 cm was comprised of loosely packed silts which contained a light scatter of lithic flaking debris. Beneath this stratum, from 11 cm to 42 cm below the ground surface, was a more compact, sandy silty stratum which contained a sparse quantity of chert chips. The sterile yellow brown clay subsoil was encountered at 43 cm below the ground surface. The unit was further excavated to a total depth of 51 cm and no cultural material or features were located within the clay stratum.

Test Units X2 and X3 were 1 m (north-south) by 2 m (east-west) tests placed on the top of the terrace. Excavation Unit 2 was situated towards the center of the terrace and X3 lay about 12 m south of X2 towards the south end of the terrace. In both units, the uppermost 7 cm consisted of the loosely packed silty stratum which contained a very light scatter of lithic flaking debris. X2 also contained a few small pieces of historic debitage in this stratum. The middle stratum was identified between the 8 cm to 35 cm level in both tests and contained a few chert chips in the uppermost portion. Both units were excavated an additional 10 cm to investigate the basal clay stratum, but no features were identified.

Units X4 and X5 were also 1 m (north-south) by 2 m (east-west) excavations placed on the top of the terrace in the southern portion of Area 781. The uppermost 10 cm in both units consisted of the loosely packed silty stratum and both contained a sparse quantity of chert flaking debris and a few pieces of burned sandstone. The middle stratum was culturally sterile in X4 and contact with the sterile clay stratum was reached at 21 cm below the surface. X4 was further excavated to a total depth of 38 cm, and no features or materials were identified in the basal clay zone. The middle stratum of X5, which was located from 11 cm

to 26 cm below the surface, contained a few chert chips, but no artifacts or features were located. The basal clay stratum in X5 was identified at a depth of 27 cm below the surface and was also devoid of cultural material. X5 was further excavated to a total depth of 52 cm and from 27 cm to 34 cm, the basal clay contained a carbonate powder. The powder feathered out at approximately 34 cm below the surface and beneath this, only the sterile clay was observed.

X6 was a 3 m (east-west) by 1 m (north-south) test placed on the top of the terrace at its western end. The uppermost silty stratum was 8 cm deep and contained a light scatter of chert chips and a few small pieces of historic debitage. The middle stratum was identified between 8 cm and 24 cm below the surface and two small chert chips were located in the approximate middle of the stratum. The basal clay stratum was identified at 24 cm below the surface and continued to the bottom of the excavation which ceased at the 45 cm level. This unit also contained a carbonate powder between the 24 cm to 28 cm level, but beneath this the stratum was sterile.

A 1 m^2 test excavation, X7, was placed on the western edge of the terrace. This area was devoid of the uppermost silty stratum which covered the majority of Area 781. The unit contained no cultural material and was excavated to a total depth of 22 cm below the ground surface, with the basal clay zone being located at 13 cm. This area has been severely eroded by the fluctuating lake level.

Two other 1 m^2 test units, X8 and X9, were placed on top of the terrace. Both of these units encountered a similar stratigraphic sequence and both contained a small amount of chert chips, historic debitage and a few pieces of burned sandstone in the two uppermost strata. Contact with the sterile clay subsoil was established at 24 cm below the ground surface in X9 and 35 cm in X8. No diagnostic artifacts were identified in either excavation.

Another 1 m^2 test, X10, was placed at the extreme southwestern edge of the terrace. The uppermost 7 cm consisted of the silty stratum which overlaid an irregularly eroded surface which could represent an older lake beach. The middle stratum extended from 8 cm to 20 cm below the surface at which point contact with the sterile clay zone was established. The unit was further excavated to a total depth of 30 cm but no features or cultural remains were located in this basal clay stratum. A small quantity of chert chips, four small pieces of historic debitage and one fresh water mussel shell fragment was located in the two upper strata.

PLATE 18. 14MY350, F12 excavated.
View to northeast.

F12 was the designator assigned to the circular concentration of burned and unburned sandstone pebbles and cobbles exposed at the northeastern limit of Area 781. F12 was roughly circular in shape and measured approximately 8 m in diameter. X11 was an irregularly shaped excavation placed in F12 to determine its archeological significance, if any (Plate 18). A fairly large quantity of chert chips, small pieces of historic debitage, two small fresh water mussel shells, burned sandstone fragments and two undiagnostic tools were located within the rock concentration. At one point, a piece of window pane glass was identified beneath the rock, suggesting that the sandstone material has undergone a considerable amount of movement. At most places, the rock was only 1 layer thick and lay atop a very thin layer of dark mottled clay containing a small quantity of lithic debris. Contact with the basal clay stratum was encountered a short distance below the burned rock. No evidence of structures was identified and no significant archeological materials were located.

Description of Artifacts

Area 781

Chipped Stone Tools

Two biface tool fragments were recovered within the rock fill of F12. One of these is the tip section of a thin triangular blade which may represent the tip of a dart point. The remaining specimen, fashioned from a large primary decortication flake, is extremely crude and does not appear to represent any specific tool type. The specimen is roughly triangular in shape and may represent a preform which was broken during one of the later stages of manufacturing.

Faunal Remains

Two very small fresh mussel shells were located within the circular rock concentration. These two specimens appear to have been deposited recently and represent very immature specimens which are virtually impossible to assign to a specific genus and species. One other fresh water mussel shell fragment was located in X10, but lacked the necessary criteria for species identification.

Floral Remains

Eight complete cockleburs, *Xanthium pennsylvanicum*, were recovered from the uppermost strata at 14MY350. Seven of these specimens came from X3 and one from within the rock concentration designated F12. While these weed seeds are indigenous to Kansas (McGregor et al. 1976:88), they appear to represent a recent deposit. They are in excellent shape and, as bone and shell preservation is virtually absent from the site, it does not seem possible for these to have survived since aboriginal times.

Conclusions

Although the artifacts gathered from the surface of 14MY350 indicated an Archaic component and possibly an additional, later utilization of the area, the test excavations did not gather additional data to support this. The first area investigated was the terrace which lay at the southern edge of Area 781. Ultimately, 10 test excavations were placed in this terrace. The results of the excavations indicated that 14MY350 has been scoured off by hydrological activity and then portions of the lighter chert flaking debris, along with small pieces of historic debitage, were redeposited along with the uppermost silty stratum. The contact with the basal clay stratum was at varying depths throughout the terrace with the

clay contact much shallower to the south then it was to the north. This indicates more deposition on the lakeward side of the site as would be expected. The majority of the lithic debitage was quite small and confined primarily to the uppermost silty stratum. This smaller material could easily have been moved about by the wave action with the larger artifacts being collected by local amateurs. Carr indicated that collectors have visited the site periodically for a number of years since its exposure in 1972.

The second area investigated was at the north end of Area 781 adjacent to the edge of the lake. One irregular shaped test excavation was placed in the circular concentration of burned and unburned sandstone material. The excavations indicated a very shallow layer of rock intermixed with small chert chips and flakes. The basal clay stratum was encountered a short distance below this which indicates that erosion has also taken place at this portion of the site. The sandstone material has been moved about considerably, and the piece of window pane glass which was found below the rock fill supports this. As to the circular nature of F12, no evidence was found indicating that the stones were fired in place. Also, no evidence of structural remains were identified. It can only be assumed that the significance of this feature, if any, has been destroyed by the wave action of the lake.

Recommendations

It appears that 14MY350 has been destroyed by the fluctuating level of the lake with the exposed material being removed by natural as well as human agents. No intact cultural stratum was identified in any of the tests. The site does not warrant any additional formal archeological investigations or specific preservation measures.

14MY341

A site on the north side of a terrace edge immediately adjacent to the southern edge of the lake which was recorded by Witty in 1972 consisted of an abundant amount of burned and unburned sandstone fragments, chert chips and flakes and a few artifacts which extended for approximately 140 m along the lake beach. Since the time of the initial survey, the site has been revisited and a sizable quantity of artifacts have been recovered which are suggestive of the Middle Woodland period.

The surface collections include a number of chipped stone projectile points and projectile point sections. The majority of these are medium to large corner-notched points with expanding stems. Two other small corner-notched points with expanding stems which are representative of the Scallorn stylistic type (Bell 1960) were also recovered. These point types are usually associated with the Early

Ceramic occupation in southeast Kansas (Marshall 1972). A number of other projectile point fragments are suggestive of the Gary stylistic type (Bell 1958) which consist of the contracting stem variety with convex bases. The remaining chipped stone tools represented bifacial blade and tip sections, knife fragments, one well-made plano-convex end scraper, two end scraper fragments, two drills with modified expanding bases, and numerous other undiagnostic tool fragments.

The remaining cultural material recovered from the surface of the site included chert cores, one combination muller/nutting stone, three pieces of ground hematite and one abrading stone which was utilized as a shaft smoother.

Stratigraphy

The stratigraphy encountered at 14MY341 represented two strata, the uppermost of which was a light gray (10YR 7/2) silty loam which ranged from 10-19 cm in depth. This soil overlay a brownish yellow (10YR 6/6) mottled clay which represented the culturally sterile subsoil. Excavations in the various test units ceased when contact with the sterile clay was reached. A sparse amount of cultural material was encountered in the uppermost silty loam strata.

Area 781

Area 781 was the designator given to the northern tip of the site, on land adjacent to the edge of the lake. Area 781 included an area 110 m east by west and 60 m north by south. At the time of the Society's 1978 investigations, the area was relatively open with the exception of an occasional silt bar and small stand of willow trees. Burned sandstone was visible on the ground surface as well as along the edge of the lake. Chert flaking debris was only visible along the water's edge. One sandstone grinding stone fragment was recovered from the surface of the site.

Six test excavations, labeled X1 through X6, were ultimately placed in the Area 781. All of these excavation units measured 1 m east-west and 2 m north-south. Units X2 and X5 were devoid of cultural material and encountered the sterile clay zone at approximately 18 cm below the ground surface. One small thermally altered chert flake was recovered in the uppermost zone of Unit X3 at approximately 5 cm below the ground surface and the cultural sterile clay zone was identified at 10 cm below the ground surface. Unit X1 also contained small chert chips in the uppermost zone, but the sterile clay zone was encountered at 10 cm below the surface.

Excavation Unit 4 contained a small quantity of chert chips, some of which were thermally altered. This unit also contained two small pieces of historic pottery which apparently washed into the area. The silt bars and obvious layering of the uppermost level with banded silts indicates the presence of a considerable amount of redeposition of materials.

The remaining unit, X6, was located on the south edge of Area 781 a short distance from the edge of the lake. This unit was also devoid of cultural material and no intact cultural stratum was identified. The uppermost zone appears to thicken towards the south end of the site; however, this is probably a secondary deposit.

Conclusions

While the materials located on the surface of 14MY341 suggested the presence of a Middle Woodland component, the test excavations did not yield additional data to support this occupation. The evidence indicates that the cultural zone has been eroded away with the uppermost silty loam deposit representing a soil zone which has been redeposited by the wave action of the lake. This is a rather thin deposit with smaller, lighter fragments of cultural material scattered throughout. The site appears to be eroded away and therefore has no potential of yielding significant archeological data.

Recommendations

Because of the erosion and redeposition which has taken place at 14MY341, Jones concluded that the site's archeological potential has been destroyed. No additional archeological investigations or preservation measures are recommended for this site.

14MY1350

A site identified by Carr during the 1978 survey atop a low upland terrace which lies a short distance from the east or right bank of the Squaw creek channel; this area is within the Elk City Lake State Park boundaries. A park bench is located on the northwest edge of the site. There is also an old county road which cuts through the east side of the site. At the time of the survey, 14MY1350 consisted of a thin scatter of lithic flaking debris and a few tool fragments lying in an area of approximately 200 m^2.

The artifactual material recovered from the surface of 14MY1350 suggested the presence of a single prehistoric component. The

diagnostic material included three small, plain triangular projectile point fragments which are representative of the Fresno stylistic type (Bell 1958) and are generally characteristic of the Middle Ceramic period. The surface collection also included one small well-made plano-convex end scraper and two scraper fragments.

Area 781

Area 781 was the designator given to the area containing a light scatter of cultural material which was recorded as site 14MY1350. Four test excavations measuring 1 x 2 m in size were laid out in an east-west direction coming off a north-south base line. A few chert chips were recovered from the excavations; however, all four tests encountered the sterile clay subsoil at 4-5 cm below the ground surface. This indicated that the cultural zone had been eroded away by the wave action of the lake. Jones concluded that additional excavations would have been fruitless.

Conclusions

Although the surface material collected from 14MY1350 suggested the presence of a Middle Ceramic occupation, testing did not recover additional data to support such a specific occupation. The evidence indicates that the cultural zone has been eroded away thus removing the archeological potential of the site.

Recommendations

Due to the nature of erosion which has taken place at 14MY1350, the site no longer bears potential of yielding significant archeological information. Therefore, no additional archeological work or preservation measures are necessary at this site.

14MY325

This site was identified early in the history of the Society's involvement at the Elk City lake area and lies at the confluence of Card creek and an intermittent south bank tributary. The site was identified by the presence of a number of exposures of burned sandstone and limestone which were outcropping where the stream was cutting into the edge of the site (Plate 19). The site is periodically inundated by the lake and it appears that a portion of the topsoil has been removed. The site is delimited by Card creek on the north and the intermittent tributary on the west.

A small quantity of artifactual material has been collected from the surface of 14MY325 since its discovery and these remains suggested a probable Middle Woodland cultural affiliation. This material includes two medium-sized triangular points with expanding stems and convex bases and one medium-sized contracting stemmed point which is similar to the Gary stylistic type (Bell 1958:28-29). One small triangular point with a double set of side notches on both edges is representative of the Huffaker stylistic type (Bell 1960:58-59) and was also recovered from the surface of 14MY325. The Huffaker type is normally associated with one of the later Ceramic period occupations in the Elk City lake locality and may represent a later utilization of the area.

Additionally, the surface collection includes a number of biface fragments which represent broken tools. These include one tip section, one small triangular shaped specimen with steeply beveled edges which may represent an alternately beveled knife fragment, and a few crudely shaped biface mid-section fragments.

At the commencement of the 1978 investigations, 14MY325 was virtually an island surrounded by the Elk City lake. The site was in open woods consisting of maturing hickory and walnut trees and contained approximately four or five exposures of burned limestone and sandstone which were outcropping on the north, northwest and southwest edges of the site. Area 781 was the designator assigned to the western portion of the island on which 14MY325 lies (Plate 20). Ultimately, seven test excavations were placed in Area 781 to determine its potential for archeological significance.

Stratigraphy

The soil sequence identified at 14MY325 appeared to be that of three zones which were often indistinct as one graded into another. The uppermost stratum consisted of a very dark gray (10YR 3/1) or very dark grayish brown (10YR 3/2) silty clay which ranged from approximately 10 cm to 25 cm in depth. This stratum graded into a pale brown (10YR 6/3) dense clay which in some areas extended to as deep as 45 cm below the surface. Beneath this was a very pale brown (10YR 7/4) dense clay which represented the sterile subsoil. In a few of the test excavations, the uppermost silty clay stratum was sometimes overlaid by a dark gray leafy humus.

Cultural material consisting of chert chips and flakes, a few pottery sherds, bone fragments, burned sandstone and limestone, nutshells, and a few tools were recovered from the two uppermost strata together with occasional flecks of charcoal and burned earth. No cultural material or features were observed in the very pale brown basal clay stratum.

Area 781

A north to south base line was laid out towards the eastern edge of Area 781. Seven excavation units were placed on the west and east side of this line and whenever an excavation contained a long axis, i.e., 1 m by 3 m unit, the longest axis was always oriented in an east by west direction. Due to the often indistinct transition from one stratum to the next, all the units were excavated in arbitrary 15 cm levels.

A 1 m by 3 m excavation, X1, was placed at the southwest edge of Area 781 adjacent to and above one of the burned stone concentrations that was eroding out of the bank. The uppermost 7 cm consisted of a dark gray leafy humus underlain by the dark gray silty clay stratum. Contact between the upper stratum and the underlying pale brown clay zone was indistinct. However, contact with the basal sterile clay stratum was encountered at 58 cm below the ground surface. The two uppermost strata contained a light mix along with a loosely scattered concentration of burned stone at the approximate 30 cm level. Cultural material consisting of chert chips and flakes, burned sandstone and limestone, a few bone splinters and two tools were recovered from the uppermost two strata. No cultural material or features were observed in the basal clay zone.

X2 was also a 1 m by 3 m excavation placed a short distance east of X1, and away from the western edge of Area 781. The stratigraphic sequence was quite similar to that of X1 and the unit was excavated to a depth of 40 cm below the surface. Burned sandstone, chert chips and flakes, one nutshell and a light mix was located throughout the excavation. One feature, a bison longbone fragment in association with two chert flakes was recovered at a depth of 27 cm. Time did not allow for the unit to be excavated to the sterile clay stratum and cultural debris was still being observed at the bottom of the excavation. One grinding stone fragment and one sandstone abrader were recovered from the uppermost silty clay stratum.

Another 1 m by 3 m excavation was X3, placed towards the center of Area 781 away from the edge of the lake. The same basic stratigraphic sequence was observed with the uppermost very dark grayish brown silty clay grading into the pale brown clay at approximately 25 cm below the surface. A sizable quantity of loosely consolidated burned sandstone was observed throughout the excavation along with a few bone fragments, chert chips and flakes, a few pieces of limestone and two tools. The unit was

PLATE 19. 14MY325, burned rock eroding from edge of site.

PLATE 20. 14MY325, Area 781. View to the northwest.

excavated to a depth of 40 cm at which point a dark circular stain was observed. This stain, designated F23, was located in the southeast corner of the excavation. When cored, F23 appeared to represent one-half of a shallow, circular basin shaped pit.

Excavation Unit 4 was another 1 m by 3 m excavation placed approximately 6 m north of X3. The uppermost 8 cm consisted of a leafy humus which was underlain by the silty clay stratum which extended to 21 cm below the surface. A small quantity of burned rock was encountered in this stratum along with a light mix of flecks of charcoal and burned earth. The underlying pale brown clay stratum extended from 22 cm to approximately 38 cm below the surface at which point the basal clay stratum was encountered. A light mix along with a loose scatter of burned rock was located up to a total depth of 35 cm. No features were observed in the sterile clay stratum which extends to an unknown depth.

X5 was a 1 m by 3 m excavation placed adjacent to the north-south base line, a short distance southeast of X3 and X4. The same stratigraphic sequence as that observed in X4 was noted with the sterile clay stratum being encountered at 38 cm below the surface. Once again, a light mix of charcoal and burned earth was identified along with a loose scatter of burned rock in the uppermost two strata. One projectile point was located in the 15-30 cm level. No features were identified in the basal clay stratum.

X6 was another 1 m by 3 m excavation placed on the east side of the base line at the eastern limits of Area 781. The uppermost silty clay stratum graded into the underlying clay stratum at approximately 22 cm below the surface. Both of these strata contained a very light mix and a lens of charcoal; burned earth and burned sandstone was located towards the top of the excavation. The unit was excavated to a total depth of 58 cm and contact with the basal clay stratum was encountered at irregular intervals throughout the excavation. No features were identified in the sterile clay stratum.

The last test, X7, was placed at the southern edge of Area 781. X7 was a 1 m by 2 m excavation and was the most productive of the units excavated. After removing a 14 cm level of leafy humus, the uppermost silty clay stratum extended to a depth of 26 cm below the surface. From 27 cm to 43 cm the middle, light tan clay stratum was identified. The sterile basal clay zone was encountered at 44 cm and continued to a depth of 52 cm at which point the excavation ceased. A light mix consisting of flecks of charcoal and burned earth was identified throughout

the excavation up to the contact with the basal clay stratum. A small quantity of chert chips and flakes, bone fragments, loosely consolidated burned sandstone, floral material and four small pottery sherds were recovered from the uppermost two strata. The pottery, designated F29, was identified at 24 cm below the surface. No features were observed in the basal clay stratum.

Description of Artifacts

Area 781

Ceramics

Four small, extremely weathered pottery sherds were recovered at 24 cm below the ground surface in X7. All four sherds are clay-tempered and although weathered, still display evidence of vertical cord-roughening on the exterior surfaces (Plate 21,A). The sherds are thin, ranging from 3 mm to 5 mm. The interior and exterior surfaces are a light yellowish brown (10YR 6/4) color with the exception of two interiors which are gray (10YR 6/1). The light yellowish brown color is probably the result of the firing technique employed. The vessel shape or size is not determinable from the sherds.

Chipped Stone Tools

One triangular-shaped projectile point with prominent shoulders and a slightly contracting stem with a concave base was recovered at 38 cm below the ground surface in X1 (Plate 21, B). A similar projectile point base fragment was located in the 30 cm to 45 cm level in X1 (Plate 21,C). Both the proximal and distal ends have been broken off; however, the remnants appear to represent a contracting stemmed variety. One small, plain triangular projectile point with a straight base was located in the 15-30 cm in X3 (Plate 21,D). This specimen represents the Fresno stylistic type as described by Bell (1960:44-45). The tip has been broken off and there is a shallow notch in the base which was produced during the recovery of the specimen. Finally, one small triangular-shaped projectile point with an expanding stem and relatively straight base which represents the Scallorn stylistic type (Bell 1960:484-485) was recovered from a 15 cm to 30 cm level in X5. The one tang had been damaged prior to its discovery (Plate 21,E).

One long rectangular primary decortication flake was located at 45 cm below the surface in X3 (Plate 21,F). The lateral and distal edges have been modified, thus forming a crude end scraper. The proximal end is representative of the original striking platform of the flake.

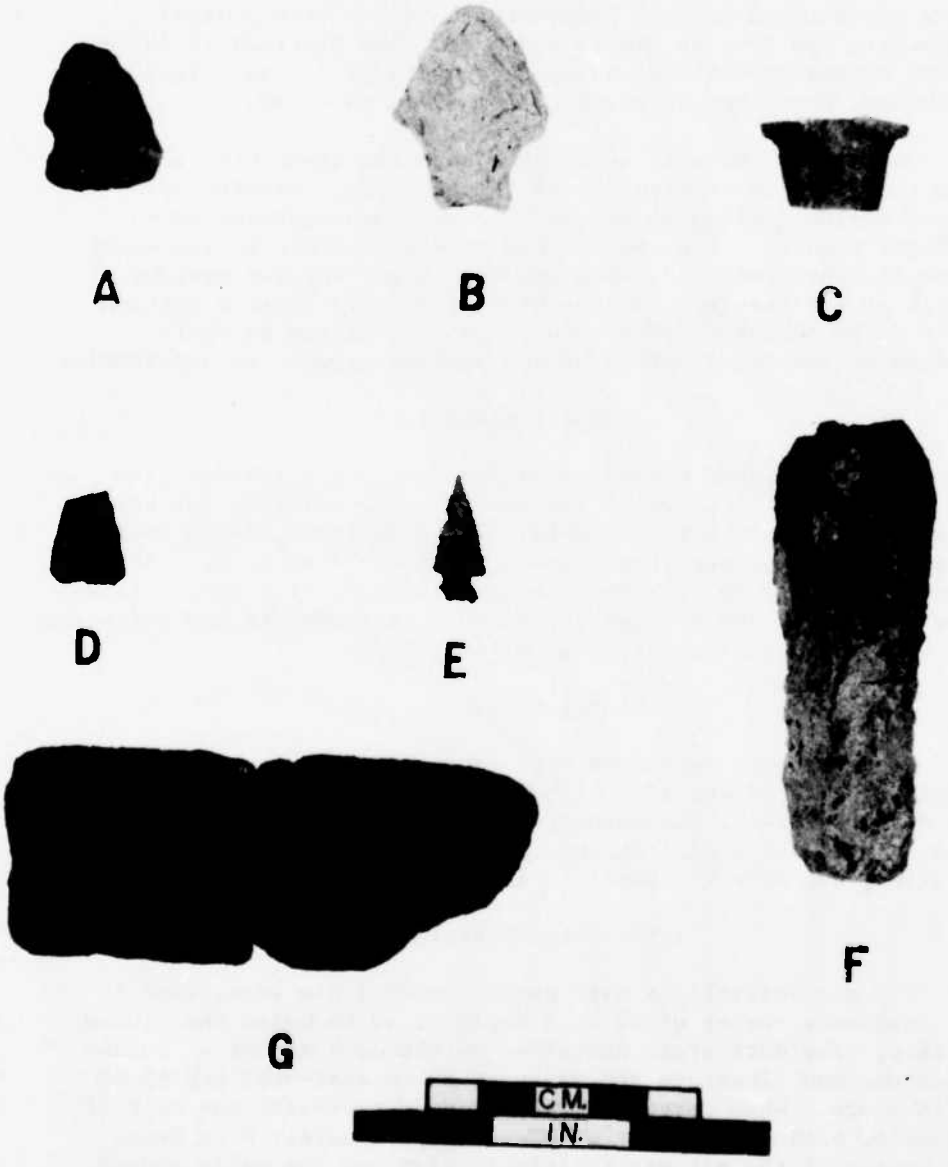

PLATE 21. 14MY325, excavated artifacts.

Ground Stone Tools

One flat milling stone fragment was recovered from just below the surface in X2. Manufactured from a fine-grained sandstone, one face is smooth and worn. The specimen is 165 mm at its longest point and the average width is 114 mm. In thickness, the stone is tapered from 59 mm to 44 mm.

One highly utilized incomplete abrading stone was recovered from the 15 to 30 cm level in X2 (Plate 21,G). Manufactured from a medium-grained sandstone, the specimen contains seven U-shaped grooves. The one end has been broken off so the exact shape is undeterminable. Two grooves extend for the maximum length of the specimen and the other five only cover a portion of it. The longer grooves were probably utilized as shaft smoothers, but the function of the smaller grooves is undetermined.

Faunal Remains

One fresh water mussel shell fragment was recovered from the 30 cm to 45 cm level in X1; however, the criteria for species identification was not available. A single identifiable long bone fragment was recovered from a depth of 27 cm in X2. This specimen appears to represent the proximal end of a bison tibia bone. Units X3 and X7 also contained bone fragments and splinters, but they were not large enough to identify.

Floral Remains

Nine complete nutshells were recovered from the 15 cm to 30 cm level in Units X2 and X7. Although a detailed analysis of these was not undertaken, they appear to represent *Hicoria ovala*, hickory nuts. A few nutshell fragments were also recovered from the same location, but were too small to identify.

Interpreted Features

F23 was initially a dark semicircular stain identified in the southeast corner of X3 at a depth of 40 cm below the ground surface. The dark stain contained an abundant amount of burned sandstone and limestone and measured 85 cm east-west and 65 cm north-south. When cored, F23 appeared to represent one-half of a shallow basin shaped pit which was approximately 8 cm deep. The bottom of the pit was relatively flat and the walls sloped slightly inward. The basin contained an abundant amount of fired sandstone and limestone but showed little or no evidence of in situ burning. It was assumed that the remaining portion, or other half of the pit, extended outside of the excavated area. Time did not allow for the excavation to be extended to incorporate this area.

Conclusions

The principal archeological features initially observed at 14MY325 were the burned rock concentrations which were eroding out of the edge of the site. The excavations placed in Area 781 found loosely scattered concentrations of burned sandstone scattered throughout the two uppermost strata. The rock concentrations on the edge of the site appear to represent this same light scattering of rock material that was observed in the excavations. However, those at the edge of the site have simply eroded in place with the soil matrix being removed. The rock then collapsed onto itself and gave the impression of a rather heavy concentration of material.

Although there was no obvious living floor located in any of the excavations, there was a light quantity of cultural debris encountered in the two uppermost strata. The one partially excavated pit that was identified at the 40 cm level and the recovered tools and pottery sherds indicate that there are intact cultural remains at 14MY325. While the excavations did not encounter any structural remains, it is plausible that they do exist at the site. The cultural debris appeared to be more dense towards the south end of Area 781.

The recovered artifacts indicate a Middle Woodland occupation and perhaps an additional later utilization of the area. The four cord-roughened pottery sherds appear to represent Pomona ware, which is representative of the Middle Ceramic period occupation located elsewhere in the Elk City lake locality. The small plain triangular Fresno point is also part of the Pomona focus assemblage, although at Big Hill lake they have also been located at Middle Woodland, Cuesta phase components (Rowlison 1979). The remaining projectile points are normally found in association with the Middle Woodland sites located in the Elk City area and elsewhere throughout the state. The ground stone tools could be associated with either Middle Woodland or the Pomona focus periods.

Recommendations

Due to the presence of an intact component(s) at 14MY325, the site appears to warrant additional archeological work in order to establish the presence or absence of significant data. The site is periodically inundated by the lake and will ultimately be destroyed. If structures do exist at 14MY325, they should be excavated to obtain information concerning the settlement patterns of the area. More extensive testing is therefore recommended for

14MY325. Preservation measures should be avoidance of the site area until such investigations can be made.

14MY1351

Recorded during the 1978 survey, 14MY1351 is immediately adjacent to the edge of the lake within the South Squaw Creek State Park area. This area is relatively flat and, at the time of the Society's 1978 investigations, the lake level was up to the site. Cultural material consisting of burned and unburned sandstone, chert chips and flakes, and a few artifacts were found scattered along the beach. The site occupies an area of approximately 800 m^2 and is further delimited by park benches and a road to the east and a boat ramp to the south.

The main features initially observed at 14MY1351 consisted of a series of intermittent concentrations of burned sandstone scattered along the water's edge. Several of these appeared to have distinct shapes and others were apparently simple scatters of burned rock. This portion of the shoreline is inundated quite frequently and there were several old shorelines present within 50 m of the existing water line.

The artifactual material recovered from the surface of 14MY1351 suggested the presence of a Middle Woodland component. The chipped stone tools include both the Snyders (Bell 1958:88-89) and Lange (Bell 1958:36-37) stylistic types which have been found at other Middle Woodland sites in the Elk City lake locality (Marshall 1972). Two projectile point base fragments suggestive of the Gary stylistic type (Bell 1958:28-29) were also recovered from the surface. The remaining chipped stone tool inventory included two modified expanding stem drills, a few bifacial blade mid-section fragments, two tip sections and two small projectile point base fragments which probably represent small to medium-sized dart points.

A few ground stone tools were also recovered from the surface of the site. These include one nutting stone with a single pecked depression, three flat milling stone fragments and four muller stones. Three of these mullers are worn down and smoothed on only one face and the remaining muller shows evidence of extensive use on both faces.

At the commencement of the 1978 investigations, 14MY1351 lay open and, except for the sandstone material, was relatively free of ground cover. The wave action is causing a considerable amount of erosion to the site especially on the west edge which is the closest to the lake. A portion of the site was probably inundated at the time of the 1978 investigations.

Stratigraphy

Two separate strata were observed at 14MY1351. The uppermost stratum was a grayish brown (10YR 5/2) silty clay which was underlain by compact mottled brownish yellow (10YR 6/6) clay which contained decaying sandstone, stream gravels and limonite inclusions. The uppermost stratum was extremely thin and contact between the two was indistinct as one graded into the other.

Cultural material consisting of lithic flaking debris, burned and unburned sandstone, two small fresh water mussel shells, one bone fragment and a few tools were contained in the uppermost silty clay deposit. No cultural material was observed in the underlying mottled clay stratum.

Area 781

Area 781 was the designator given to the shoreline vicinity which lies west and southwest of the South Squaw Creek State Park picnic area which is located adjacent to an asphalt road which runs through the park. Ultimately, four test trenches were placed in the rock concentrations in Area 781. All four trenches were oriented in a north to south direction and all were one meter wide.

The first, X1, was a test trench 8.6 m long placed in an area containing a linear arrangement of silt bars and burned rock. One feature, a projectile point, was recovered from the south end of the trench. The uppermost silty clay deposit was quite thin and graded into the sterile clay stratum from 3-6 cm below the ground surface. The test unit was excavated to a total depth of 12 cm below the ground surface to investigate the underlying clay zone. No cultural material or features were identified in this stratum. A crude bifacial blade, one bone splinter and a biface fragment were also recovered from the uppermost stratum of X1.

The next test trench, X2, was excavated at the water's edge to investigate a circular concentration of burned sandstone which dipped down at the center. X2 was approximately 8 m long. Four tools were located within the rock concentration at the ground surface. These include one sandstone muller with extensive wear on both faces, one triangular projectile point fragment with an expanding stem and convex base, one midsection of a triangular-shaped blade and the tip of a fairly large, crude biface. The

investigations indicated that the rock was laid over an irregular ground surface, but no evidence of a prepared hearth was located. The rock was only 1 layer thick and directly overlaid the brownish yellow clay stratum. Two artifacts were recovered from the uppermost zone in X2, a projectile point at the northern end of the trench and a scraper from the center portion of the excavation. Once again, this uppermost stratum was extremely thin, ranging from approximately 6-10 cm thick and immediately graded into the sterile clay subsoil.

Excavation Unit 3 was located a short distance southeast of X2. No features were recorded and no artifacts were noted within the fill. Contact between the two strata was indistinct and one graded into the other. A few chert chips were located in the uppermost stratum of X3. The southernmost 1 m^2 portion of the trench was further excavated to a depth of 50 cm below the ground surface to investigate the clay subsoil. No features were identified in this stratum; however, it did contain decaying sandstone fragments, stream gravel and limonite inclusions.

The last trench, X4, was a 3 m long trench located north and east of X1. A few chert chips were recovered in the uppermost portion of the grayish brown silty clay level, but the sterile clay stratum was encountered a few centimeters below the ground surface. X4 was further excavated to a depth of 15 cm below the ground surface to investigate the clay subsoil, but no features or cultural material was identified.

Description of Artifacts

Area 781

Chipped Stone Tools

The chipped stone artifactual material recovered from Area 781 came primarily from trenches X1 and X2. One medium sized triangular dart point with slightly convex blade edges, shallow side-notches and a slightly convex base was recovered from just below the ground surface in the southern portion of X1. Another projectile point, designated F7, was recovered from trench X2. This is a small sized dart point with slightly convex blade edges, shallow, wide side notches and a concave base. One scraping implement was also recovered from X2. This specimen consists of a large chert flake with retouch along its exterior lateral edges.

Ground Stone Tools

One muller stone was recovered from just below the surface in trench X2. Manufactured from a fine-grained sandstone, both faces are extremely smooth and worn down.

Faunal and Floral Remains

The faunal material was extremely scarce at 14MY1351 and only two fresh water mussel shells were located during the excavations. These shells are quite small and appear to represent *Quadrula quadrula*, a species which is quite common throughout eastern Kansas. The floral remains were even more limited and only one specimen, an acorn cap, was recovered during the excavations. The fossilized remains of what appears to be a large mammal tooth was also recovered from the surface of 14MY1351. It would be pure conjecture to speculate on how this fossil ended up on the surface of the site.

Conclusions

The chipped stone tools recovered from the excavations in Area 781 further indicated the presence of a Middle Woodland component at 14MY1351. The main features investigated at the site were the large concentrations of burned sandstone cobbles and pebbles. Initially, these appeared to have a somewhat oval to circular shape. These were investigated by placing trenches X1 through X4 in and between these concentrations. The test trenches identified a very shallow concentration of material which was situated on top of a sterile clay zone.

The initial study determined no functional explanation for these concentrations of burned rock. Additionally, the site was investigated to determine whether or not they were habitations by looking for post molds and hearths. However, nothing was located to indicate that these concentrations were habitation sites. There is a sandstone outcrop just a few hundred meters south of the site which would have been a likely source for the materials; however, why the material would be burned remains unanswered.

Witty had suggested that the concentrations be viewed in aerial view to determine if they had an observable activity pattern; however, the concentrations when so viewed appeared very amorphous in outline.

It appears that 14MY1351 has been eroded away. The soil matrix is missing and most of the artifactual remains have either been eroded away or removed by collectors. There is no depth to

any of the cultural remains at the site. For the above reasons, it is concluded that the site no longer bears potential of yielding significant archeological information.

Recommendations

14MY1351 has been eroded away by the fluctuating lake level and appears to no longer bear potential of yielding significant archeological information. No further formal archeological work is recommended for 14MY1351 at the present time. No preservation measures are recommended.

14MY378

A rock shelter was recorded by Carr in 1975 as being at the base of a 4 m to 5 m high limestone bluff which runs in an approximate east by west direction along the north shore of the Elk City lake. Initially, 14MY378 probably started out as a simple prehistoric occupation of a rock overhang in the limestone. However, more recently the shelter was excavated further back into the limestone, thus forming a narrow cave (Plate 22). This does not appear to have been so excavated aboriginally, but was probably done so recently. The actual cave opening is very low, about 2 m high at the outermost part by 5.5 m wide. The roof of the cave descends quite rapidly and by about 5 m from the front of the cave is only 0.5 m to 1 m high. The cave then extends back into the rock at this low level for six additional meters.

Only a small quantity of cultural material was recovered during the survey and included chert chips and flakes, grinding stone fragments, bone fragments, mussel shells, and two mammal teeth (one beaver and one deer). There was also a dense concentration of mussel shells, both burned and unburned animal bone fragments, burned earth, charcoal and historical debitage at the front of the entrance, and may in fact represent a small midden along with some displaced soil from the cave. Carr also noted that someone had recently dug a small pothole into the floor of the shelter. No diagnostic artifacts were recovered during the initial investigations.

At the time of the 1978 investigations, Jones noted a sizable quantity of historic debitage along the edges of the cave and on the ground surface. There was also a line of limestone cobbles placed across the front of the cave, perhaps serving as a more recent historic shelter. Area 781 was the designator given to the area in front of the outer passageway of the cave. This included a low spot in the floor of the cave and the rounded rim of fill across the outer mouth of the shelter. A 1 m wide by 6 m long trench was placed in an approximate north by south direction and extended across the low ridge of debris back into the front of the cave (plate 23).

PLATE 22. 14MY378, view to approximate north.

PLATE 23. 14MY378, test trench.

Stratigraphy

Generally, the soil consisted of a silty clay which ranged from a light gray (10YR 7/1) to a dark gray (10YR 4/1) color. This color range appears to be the result of varying levels of moisture within the soil. At no point in the excavations was the underlying sterile clay soil observed.

Cultural material consisting of both historic and prehistoric materials was recovered from all of the test excavations. At the bottom of the excavations, the historic material was extremely sparse in comparison to the upper levels. On the other hand, the prehistoric debitage became much more abundant and it was at this level that contact with the purely prehistoric level was probably established. Due to the very limited amount of time remaining, excavations ceased at the contact level.

Area 781

All vertical measurements were taken from Datum No. 1, which consisted of a steel spike driven into the western wall of the cave 110 cm above the southwest corner of X8. This spike is designed to serve as the permanent datum from which all vertical measurements will be extrapolated. The test trench included six 1 m square units numbers X5 through X10. X5 was the unit placed on the north end of the trench within the actual cave and X10 was the unit furtherest south, which is outside of the cave opening. All units were excavated by arbitrary 15 cm levels.

The last units excavated were X5 and X6 and, due to the limited amount of time remaining, only one 15 cm level was excavated. X5 was placed inside the shelter and X6 lay beneath the limestone rock overhang (drip line). Both units were excavated from 1.25 m to 1.40 m below the datum and the soil consisted of a dark gray (10YR 4/1) silty clay intermixed with an abundant amount of limestone gravels and cobbles. The recovered cultural material included historic debitage, fresh water mussel shell fragments, bone fragments, snail shells, a few chert chips and other miscellaneous faunal material. No diagnostic prehistoric materials were recovered from either unit.

Excavation Unit X7 was placed in the vicinity of the rock wall feature and the low ridge of soil and trash which lies outside of the limestone overhang. The rock wall is predominant along this low ridge and did not have any extensive depth to it,

bottoming out a short distance below the ground surface. The rock appears to be set in a very shallow trench which contained a dark humus material. The unit was excavated from 1.10 m to 1.70 m below datum and the soil consisted of a dark gray silty clay with dense quantities of limestone gravels and cobbles. Cultural material consisting of fresh water mussel shells, snail shells, bone, chert chips and flakes, historic debris and prehistoric pottery sherds were recovered throughout the excavation. One feature, a concentration of cord-roughened, clay-tempered pottery sherds, was recovered at 1.65 m below datum and was located in both the south end of X7 and the north end of X8. It was at this depth that Jones concluded the purely prehistoric level was encountered. Before this level, historic material was encountered throughout the excavation.

Unit X8 was excavated from 1.10 m to 1.70 m below the datum. The uppermost soils were extremely disturbed and consisted of a light to medium gray silty clay along with historic material, a large quantity of faunal material and a few chert chips and flakes. The test also in the vicinity of the low ridge of trash and soil and the majority of the mixing is probably the result of soils which were excavated from the cave and then redeposited in this area. The base of a small expanding stemmed point with side notches was also recovered from the uppermost zone. Beneath this was a dark gray silty clay with a large quantity of limestone gravels and cobbles. This zone also contained fresh water mussel shells, snail shells, bone, turtle shell fragments, chert chips and flakes, miscellaneous prehistoric pottery sherds and the remaining portion of the pottery sherd concentration identified at the 1.65 m level. From 1.55 m to 1.70 m below datum, no historic debitage was encountered. At this level, the intact prehistoric level was probably encountered.

The next unit, X9, was excavated on the downward side of the low ridge of trash and was dug from 1.10 m to 1.70 m below datum. An extremely large quantity of faunal material was recovered throughout the excavation along with historic debris, chert chips and flakes, a small amount of plant material, pottery sherds, and a few tools. Two projectile points were recovered from the 1.10 m to 1.25 m level. One grinding stone fragment was also recovered from the 1.55 m to 1.70 m level. The historic material appeared to thin out towards the bottom of the excavation suggesting contact with the undisturbed prehistoric material.

Finally, X10 represented the southern edge of the trench and was excavated from 1.25 m to 1.70 m below the datum. The soil consisted primarily of a light gray silty clay with a small quantity of limestone gravel contained in the uppermost 6 cm to 14 cm. Beneath this, the soil was devoid of limestone gravels

and cobbles. The recovered cultural material consisted of historic debitage, prehistoric pottery sherds, chert chips and flakes, faunal remains and one projectile point.

Description of Artifacts

Area 781

Ceramics

One partially restored clay-tempered vessel was recovered from the 1.65 m level in Units X7 and X8 (Plate 24). The interior surface is fairly smooth and is a very pale brown (10YR 7/3) color. The exterior surface is a very pale brown (10YR 7/3) to a grayish brown (10YR 5/2) color and is primarily vertically cord-roughened up to and including the lip. Towards the bottom of the vessel, the cord-roughening is more haphazard which produces a cross-corded appearance. The vessel shape is globular with a constricted neck and a short, slightly outflaring rim. The rim is thinned towards the lip which is rounded. The body sherds are 4 mm to 6 mm thick and are much thicker at the upper portion of the shoulder, averaging approximately 9 mm. The lip averages approximately 4.5 mm in thickness. Additional clay-tempered, cord-roughened sherds which appear to be from the same vessel were recovered from the 1.10 m to 1.25 m level in X8, the 1.25 m to 1.40 m level in X7, and the 1.55 m to 1.70 m level in X7.

The remaining pottery sherds were recovered from various levels throughout the test trench. These sherds appear to represent several vessels and can be separated into two groups, based on the tempering agent utilized. The first of these is a trash temper composed primarily of bone, stone, and a small quantity of sand. The exterior surfaces of this group all display evidence of cord-roughening, but on two of the sherds, the potter attempted to obliterate the impressions, thus producing a smoothed over cord-roughened appearance. These sherds are extremely small and quite weathered and no vessel shape or size is determinable.

The final group consisted of nine sherds all of which were sand-tempered with cord-roughened exterior surfaces. Once again, these are small, badly weathered sherds and appear to represent several vessels.

Chipped Stone Tools

Three complete projectile points and two bases were recovered from the test trench in Area 781. One small triangular point with shallow side notches and a slightly convex base was recovered

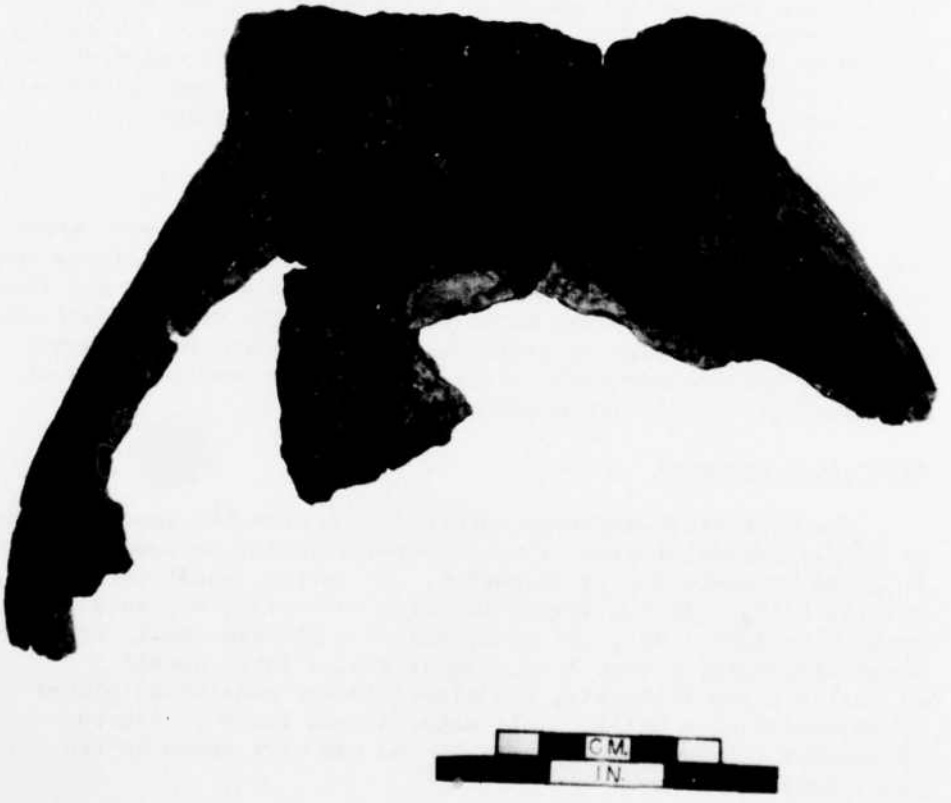

PLATE 24. 14MY378, partially restored vessel.

from the 1.55 m to 1.70 m level in X10. This specimen is 25 mm long, 11.5 mm wide at the base and is approximately 4 mm thick. One small triangular blade with an expanding stem representative of the Scallorn stylistic type (Bell 1960:84-85) was recovered from the 1.10 m to 1.25 m level in X9. This point is 24 mm long, 9 mm wide at the base and is 3.5 mm thick. One small plain triangular point with a slightly convex base representative of the Fresno stylistic type (Bell 1960:44-45) was recovered from the 1.10 m to 1.25 m level in X9. This specimen is 21 mm long and is approximately 3.5 mm at its thickest location. Another Fresno base was also recovered in X9; however, it was located out of context. Finally, one small side-notched base was also recovered from the 1.25 to 1.40 m level in X8. The exact shape of this specimen is not determinable; however, it appears to be from a small, side-notched triangular projectile point.

Ground Stone Tools

A small quantity of ground stone tool fragments were recovered from the excavation in Area 781. All five of these specimens have one face that is extremely smooth and slightly worn down and they probably represent milling stone fragments. The working surfaces are flat and no trough or basin-shaped depressions are present. The specimens are extremely small and the size and the shape of the complete tool is not determinable.

Historical Material

The historical debitage gathered from Area 781 appears to be of fairly recent origin. The recovered material includes Coca Cola and Seven-Up bottle fragments, .22 caliber shell cartridges, a metal knife, tin can fragments, wire cut nails, pop bottle caps, a hexagonal nut, the metal end of a shotgun shell, scrap metal fragments, a wire ring, one buckle, a large quantity of bottle glass fragments, and miscellaneous additional pieces of unidentifiable metal. This material was found scattered throughout the various excavations and was more dense in the upper levels.

Faunal Remains

A very large quantity of faunal material was recovered from Area 781. A detailed analysis of the fresh water mussel shell was not undertaken; however, *Quadrula quadrula* and *Ligumia subrostrata* appear to be prevalent in the collections. These specimens are quite common throughout the eastern half of Kansas.

The osteological material recovered from Area 781 came primarily from Units X7, X8 and X9. A detailed analysis of this

material was completed by the Archeology Laboratory at the Kansas State Historical Society and the following is a summary of the recovered material:

Class *Mammalia*
Order *Marsupialia*
Family *Didelphidae*
Didelphis marsupialis - opossum
7 teeth - 1 maxillary canine
1 maxillary premolar, second left
1 maxillary, third molar
1 maxillary, fourth molar
1 mandibular, fourth molar (2)
1 mandibular canine
1 maxilla section
1 left maxilla section
1 sagital crest
1 mandible section
1 left mandible section
2 axis
1 right humerus
1 left ulna
1 right ulna

Order *Insectivora*
Family *Soricidae* - shrews
1 mandible

Order *Lagomorpha*
Family *Leporidae* - rabbits
11 mandible; four left, one right
3 maxilla; one right
2 palatine
9 vertebra; all lumbar
1 sacrum
3 scapula; two right, one left
13 innominate; one right, seven left, one immature
3 ulna; three right
5 humerus; two left, one right
4 tibia; three right, one left
6 femur; three left, two right
8 calcanei; five left, three right

Class *Mammalia*
Order *Rodentia*
Family *Sciuridae*
Sciurus - squirrel
1 caudal vertebra, seventh or eighth
1 cervical vertebra, seventh
1 calcaneus, left

Cynomys - prairie dog
1 femur, left

Family *Geomyidae*
Geomys bursarius - pocket gopher
1 humerus

Family *Castoridae*
Castor canadensis - beaver
7 teeth - 5 molars

Family *Cricetidae*
Neotoma - wood rat
4 humeri; two left, one right
1 mandible, right
1 femur, left

Order *Carnivora*
Family *Canidae*
2 axis sections, one burned
teeth - 1 incisor
1 maxillary, third incisor
1 maxillary, second premolar
1 maxillary, first molar
2 maxillary, right second molars
1 mandibular canine
2 mandibular, first molars
1 mandibular, second molar

Family *Procyonidae*
Procyon lotor - raccoon
teeth - 1 maxillary canine
1 maxillary incisor
1 maxillary, right second molar
1 maxillary, left second molar
1 mandibular, first molar
1 left mandible
1 talus

Order *Carnivora*
Family *Mustelidae*
Mephitis mephitis - skunk
teeth - 1 maxillary canine
2 mandibles, right

Family *Felidae*
Felis domesticus - common cat
1 immature mandible section
1 calcaneus

Order *Artiodactyla*
Family *Cervidae*
Cervus canadensis - elk
1 tooth section

Odocoileus virginianus - white tailed deer
27 teeth - 3 incisors
10 premolars
6 molars
2 mandible sections
1 tibia section
5 metapodial sections
6 phalanx
3 distal phalanx
2 malleoli
1 fused central and fourth tarsal
1 sessamoid
1 carpal

Family *Suidae*
Sus - swine
Teeth - 1 canine
1 deciduous
1 incisor section

Class *Aves*
1 long bone shaft

Class *Reptilia*
Order *Testudines* - turtles
46 carapace sections, two from aquatic turtles

Family *Emyidae*
Terrapene - box turtle
1 plastron section

Order *Squamata*
Suborder *Serpentes* - snakes
6 vertebra
Family *Crotalidae* - pit vipers
1 vertebra

Class *Osteichthyes* - boney fish
10 vertebra

Floral Remains

The floral remains recovered from the excavations in Area 781 were quite sparse and were limited to Units X8 and X9. One walnut shell was recovered from the 1.40 m to 1.55 m level in X9. The uppermost levels in both X8 and X9 contained a few hackberry seeds.

Conclusions

The principal features investigated at 14MY378 consisted of the remnants of a rock wall which partially enclosed the shelter and the low ridge of soil and debris outside of the shelter. The excavations indicated that a considerable amount of soil displacement has occurred at 14MY378. Units X7 through X10 emphasize this by the presence of both historic and prehistoric materials being located together in the upper levels of the excavations. It was not until the bottom of these excavations that the intact prehistoric level was finally identified. The displacement of soil and historic and prehistoric material resulted from recent excavations which have taken place in the actual shelter area. The rock wall appears to represent a fairly recent attempt at enclosing the shelter. Whatever its purpose was remains unanswered.

The recovered projectile points and ceramics indicate a late Middle Woodland/early Middle Ceramic prehistoric occupation. As was previously mentioned, the excavations did not appear to locate the intact prehistoric stratum until the lower levels of the excavations. However, intact prehistoric cultural remains do exist at 14MY378 and its potential for yielding significant archeological data is quite high.

Recommendations

Site 14MY378 is quite small and does not contain the abundant amount of roof fall which was encountered at the other rock shelters in the Elk City lake locality. The preservation of faunal material is excellent and presents a valuable resource for determining the subsistence base of the late Middle Woodland/early Middle Ceramic groups. The site also appears to be subjected to vandalism which is quite evident by the pothole encountered in the floor of the shelter. Therefore, it is recommended that 14MY378 be excavated. Preservation is important until the site can be studied.

14MY1353

A rock shelter is situated at the base of a limestone outcrop which trends in an approximate northeast to southwest direction along the north shore of the lake near its eastern end. Recorded during the Society's 1978 survey, the surface of 14MY1353 is partially obscured by a large quantity of roof fall and limestone gravels which have washed into the area. The roof fall is so extensive that there is almost no shelter at all remaining. The ground surface slopes downward from the shelter to the beach area.

The main feature initially observed at the site was a thick band of dark soil extending along the base of the shelter in an east by west direction. A large portion of this soil zone is obscured by limestone beach gravel. The survey recovered a sizable quantity of ground and/or pecked stone tool fragments, burned limestone and sandstone, bone fragments, a few fresh water mussel shells and one chert flake. Due to the lack of diagnostic artifacts, no tentative cultural affiliation was assigned to 14MY1353.

The majority of the ground stone tools recovered from the surface are those normally associated with food preparation. These include one large milling stone with a basin-shaped depression, three fragments of one partially restorable trough-shaped milling stone, one flat milling stone with no depression or trough and the fragments of two additional milling stones with basin-shaped depressions. Also recovered from the surface were six complete and three muller stone fragments, one hammerstone and one loaf-shaped pecked stone which appears to be in one of the preliminary stages of lithic manufacturing.

Only one chipped stone tool was recovered from the surface of 14MY1353. This tool represents the remnants of a larger bifacial blade with a battered tip and a hinge fracture across the blade, perpendicular to its edge. The resulting tool is a medium-sized triangular blade with the proximal end (hinge fracture) being retouched, thus forming a triangular scraping or gouging device.

Stratigraphy

Two distinct strata were observed at 14MY1353. The uppermost stratum consists of a very dark gray (10YR 3/1) silty clay which overlays a pale yellow (5Y 8/3) compact sterile clay. The uppermost zone contains a sizable quantity of limestone gravels throughout its matrix.

Cultural material consisting of lithic flaking debris, fresh water mussel shells, bone fragments, burned earth, burned

limestone, snail shells, a few pottery sherds and one projectile point were contained in the uppermost silty clay stratum. This was the last site tested by Jones in 1978 and the time factor did not allow for any examination of the underlying clay zone. However, Jones does refer to this as being a culturally sterile zone.

Area 781

Area 781 is a designated location 30 m east and west from a massive limestone boulder which lies adjacent to the northern edge of the Elk City lake. Immediately east of this large boulder lie the remnants of the rock shelter. The dark gray silty clay deposit is outcropping below the overhang and extends west past the overhang and the massive boulder into an open area which is covered by beach gravel. Five 1 m test squares were excavated into the dark soil zone, with two of them being under the overhang, one adjacent to the boulder on its east side and two in the gravel covered area immediately west of the boulder. The units were excavated in arbitrary 15 cm levels to varying depths.

X1 was placed at the extreme west end of Area 781 in the area covered by beach gravel. The unit was excavated to a depth of 30 cm below the ground surface and a small amount of chert chipping debris, five small pieces of burned earth and three bone fragments were located within the excavation. The uppermost 8 cm consisted of limestone gravel and the remaining 22 cm included the dark soil matrix intermixed with gravel. No diagnostic artifacts or features were located.

Excavation Unit 2 was a test square excavated in the gravel covered area west of the large boulder. No features or diagnostic artifacts were recovered from this unit. It was excavated to a depth of 60 cm below the ground surface and the uppermost 7 cm was composed entirely of beach gravel. From 7 to 38 cm below the surface, the dark soil band was intermixed with beach gravel, and below this, the soil matrix was devoid of any gravels. The recovered cultural material was scattered throughout the excavation and consisted of three small chert chips, two fresh water mussel shell fragments and two small unidentifiable burned bone fragments.

The next unit, X3, was placed immediately east of the limestone boulder on the steeply pitched slope which descends towards the lake. No features were recorded and only a light amount of cultural material was recovered throughout the excavation. The unit was excavated to a depth of 47 cm below the ground surface and limestone gravels and fragments of burned sandstone were found scattered throughout the excavation.

Units X4 and X5 were contiguous squares excavated underneath the overhang in Area 781. Both units were excavated to a depth of 30 cm below the ground surface and each contained a light cultural fill intermixed with a considerable amount of roof fall. The recovered cultural material consisted of fresh water mussel shells, chert chips and flakes, bone fragments and a few snail shells. One projectile point was located in the 0-15 cm level below ground surface in X4. Excavation Unit X5 contained five small pottery sherds recovered from the 15-30 cm level.

Description of Artifacts

Area 781

Ceramics

The five pottery sherds recovered from X5 appear to represent two vessels. Three of the sherds, which include one rim and two body sherds from a single vessel, represent a rather small, globular-shaped jar with a slightly thickened, straight rim. The two body sherds are 6 mm thick and the rim sherd is approximately 9 mm thick. The surfaces are a light yellowish brown (10YR 6/4) color and the exterior is vertically cord-roughened. The lip of the rim is rounded and three lines, spaced 7 mm apart, are incised in a diagonal direction from the top of the lip down into the interior surface of the vessel. These lines are approximately 10 mm long. The shape and surface treatment of these sherds resemble those ceramics from other Middle Ceramic, Pomona focus sites located elsewhere in the Elk City lake locality. However, they are tempered with a combination of burned bone, sand, and crushed stone which sharply contrasts the clay temper which normally occurs in Pomona ware ceramics. Additionally, the incised lines, which extend down into the interior of the vessel, is not a normal Pomona ware decorative trait. These differences may represent a local variant of the Pomona focus.

The remaining two sherds are body sherds and may possibly be from a single vessel. The surfaces are a brownish yellow (10YR 6/6) color and both exterior surfaces are cord-roughened. Both sherds are clay-tempered and are approximately 4.5 mm thick. No vessel shape can be derived from these two sherds; however, they appear to resemble the ceramics recovered from other Middle Ceramic, Pomona focus occupation sites identified elsewhere within the Elk City lake locality.

Chipped Stone Tools

One projectile point was recovered from the 0-15 cm level in Unit X4. This specimen is a medium-sized triangular blade with a rectangular stem and convex base. The total length measures 46 mm long and it is approximately 7.5 mm thick. The specimen is 33 mm wide at the shoulders.

Faunal Remains

A small quantity of mussel shells were recovered in Area 781, and they were primarily restricted in distribution to Units X4 and X5 which were located beneath the limestone overhang. Although a detailed analysis of the shell was not completed, a few of the specimens appear quite similar to *Odovaria olivaria*, a species which has been extirpated in Kansas since approximately 1905 (Murry and Leonard 1962:158-162). The remaining shells appear to represent *Quadrula quadrula*, a species which is quite common throughout the eastern one-half of Kansas. A single identifiable mandible section represents *Sylvilagus floridianus*, cottontail rabbit. A few snail shells were recovered from Units X4 and X5, but analysis of these was not undertaken.

Conclusions

The data recovered from the 1978 test excavations indicate that the remnants of a Middle Ceramic, Pomona focus component is present at 14MY1353. However, Jones concluded that the majority of this component has been eroded away by the wave action of the lake. Additionally, there was only a small amount of cultural material recovered within the dark gray silty clay deposit which further indicates the results of this erosional activity.

Recommendations

The lack of sufficient archeological remains combined with the erosional aspect would indicate that future archeological investigations would be better directed at one of the other rock shelters along this north shore of the lake. The site is currently subjected to periodic erosion, and will ultimately be completely destroyed. No further archeological investigations or preservation measures are recommended for 14MY1353.

CULTURAL RESOURCE MANAGEMENT PLAN

Water projects, by nature of their locations across streams, valleys, and floodplain areas, are placed in the area of highest potential for both prehistoric and historic cultural resources. The construction of major federal reservoirs has long been recognized to have an adverse affect upon the preservation of archeological sites. The negative impacts can be substantially offset with professional expertise, by land managers as well as archeologists, if the nature of the impacts and the variety of preservation techniques are understood. Within a large lake project like Elk City, the impact varies according to the location of the site, i.e., construction areas, multiple purpose pool area, flood pool area, and the noninundated land bordering the project which is owned and/or controlled by the government.

Within the construction areas and the multiple purpose pool zone all of the archeological sites will be destroyed or at best made inaccessible due to inundation. First to be destroyed are those sites in the construction areas, borrow pits, access roads, areas of timber removal etc. At Elk City lake, at least five prehistoric sites were destroyed during the initial construction of the dam. These sites included 14MY315, 14MY318, 14MY321, 14MY323 and 14MY335. Those sites which do remain after the initial construction activity, but will be permanently inundated by the multiple purpose pool, are subject to erosion by current activity and wave action. This was observed at Elk City when the lake level was lowered in 1972 in order to cap a seeping oil well. Witty observed at least six sites which suffered erosional damage (Witty 1972). These sites included 14MY306, 14MY307, 14MY320, 14MY327, 14MY347 and 14MY349.

Sites which exist in the zone between the limits of the multiple purpose pool and the maximum flood pool elevation are subject to periodic inundation and accompanying wave action as well as more normal erosion, as vegetation may be periodically killed and the surface exposed. Destruction in this zone is slower but just as certain. At Elk City Lake, at least six prehistoric sites have been totally or partially destroyed in this zone. These sites include 14MY341, 14MY350, 14MY1349, 14MY1350, 14MY1351 and 14MY1353. Land management within this flood pool zone often entails leasing the land for cultivation, parks and game management areas. Cultivation renews the steady destructive process by plowing and mixing the upper soil zones. Certain nonsurface-altering park and game management activities are normally less destructive and might be managed for purposes of historic preservation of resources. The Infinity site, 14MY305, is one of the sites currently being preserved. This

site has been removed from cultivation and is now covered with natural vegetation which hopefully will curtail natural as well as cultural destructive processes.

Sites on government-owned land adjacent to the reservoir, but not inundated, are not endangered by the water but may be threatened by cultivation, public use areas, roads, borrow pits, trash dumps, vandals, etc. Careful management by site avoidance may avoid destruction and result in some sites actually benefiting by project development. In this area there may be sites with sufficient cultural and historical significance to justify interpretive presentation. With development, these could provide attractive recreation and educational benefits to the project.

Therefore, the affects on sites within the three major areas or zones of a large reservoir like Elk City may be categorized as follows:

a. Imminent Loss - Sites which lie in construction areas and within the multi-purpose pool zone (< 796 feet MSL).

b. Eventual Destruction - Sites in the zone between the multi-purpose pool level and the maximum floodpool level (825 feet MSL).

c. Possible Preservation and/or Enhancement - Sites on government-controlled lands adjacent to active project elements.

CULTURAL RESOURCE SUMMARY

As was previously mentioned, 103 prehistoric archeological sites have thus far been located in the Elk City lake area. The legal descriptions and elevation above mean sea level of these sites are presented in Table I.

Table I. Cultural Resources of Elk City Lake

Site Number	Elevation Above Mean Sea Level:	Legal Description:
14MY302	827'	NW¼, NW¼, Sec. 7, T32S, R14E.
303	820'	NW¼, NW¼, Sec. 7, T32S, R14E.
304	820'	NE¼, NE¼, Sec. 17, T32S, R14E.
305	800'	NE¼, Sec. 22, T32S, R14E.
306	790'	SE¼, NW¼, Sec. 19, T32S, R15E.
307	785'	NE¼, NE¼, Sec. 24, T32S, R14E.
309	790'	SE¼, NE¼, Sec. 14, T32S, R14E.
310	785'	SW¼, SW¼, Sec. 17, T32S, R15E.
311	790'	NE¼, NW¼, Sec. 19, T32S, R15E.

Table 1 (continued). Cultural Resources of Elk City Lake

Site Number	Elevation Above Mean Sea Level:	Legal Description:
14MY312	780'	SE¼, SW¼, Sec. 17, T32S, R15E.
313	775'	SW¼, NE¼, Sec. 17, T32S, R15E.
314	820'	Center of the NE¼, Sec. 18, T32S, R14E.
315	780'	Center of the NW¼, Sec. 16, T32S, R15E.
316	800'	SW¼, SW¼, Sec. 14, T32S, R14E.
317	790'	SW¼, NE¼, Sec. 14, T32S, R14E.
318	775'	SW¼, SW¼, Sec. 8, T32S, R15E.
319	795'	NE¼, NE¼, Sec. 27, T32S, R14E.
320	780'	NW¼, NE¼, Sec. 20, T32S, R15E.
321	790'	SW¼, NW¼, Sec. 9, T32S, R15E.
322	785'	SW¼, NE¼, SE¼, Sec. 17, T32S, R15E.
323	770'	NW¼, NW¼, Sec. 16, T32S, R15E.
324	790'	NW¼, SW¼, Sec. 9, T32S, R15E.
325	825'	NE¼, NW¼, NE¼, Sec. 27, T32S, R14E.
326	780'	NE¼, NW¼, Sec. 20, T32S, R15E.
327	790'	Center of the NW¼, Sec. 19, T32S, R15E.
328	800'	NW & SW¼, SW¼, Sec. 23, T32S, R14E.
329	825'	NW¼, NE¼, Sec. 22, T32S, R14E.
334	800'	Jct. of Sec. 14, 15, 22, 23, T32S, R14E.
335	790'	NE¼, NW¼, Sec. 9, T32S, R15E.
336	810'	SE¼, NE¼, NE¼, Sec. 28, T32S, R14E.
341	795-800'	SW¼, NW¼, Sec. 19, T32S, R15E.
342	805'	SW¼, NW¼, Sec. 22, T32S, R14E.
344	830'	NE¼, SW¼, Sec. 11, T32S, R13E.
346	770'	NW¼, NW¼, Sec. 9, T32S, R15E.
347	790'	NW¼, SW¼, Sec. 18, T32S, R15E.
349	785'	NW¼, NW¼, Sec. 20, T32S, R15E.
350	790-800'	SE¼, NW¼, Sec. 20, T32S, R15E.
351	790'	NE¼, SW¼, Sec. 19, T32S, R15E.
352	790'	NE¼, SW¼, NW¼, Sec. 19, T32S, R15E.
354	800'	SE¼, SW¼, Sec. 20, T32S, R15E.
355	805'	NE¼, SE¼, SW¼, Sec. 14, T32S, R14E.
356	815'	SE¼, NW¼, Sec. 17, T32S, R14E.
357	815'	SW¼, NE¼, Sec. 16, T32S, R14E.
358	800'	NE¼, NE¼, Sec. 21, T32S, R14E.
359	825'	NW¼, SE¼, Sec. 11, T32S, R13E.
360	820'	NW¼, SW¼, Sec. 11, T32S, R13E.
362	770'	NW¼, NW¼, NW¼, Sec. 9, T32S, R15E.
366	830'	NE¼, SE¼, SW¼, Sec. 12, T32S, R13E.
367	830'	NE¼, SE¼, Sec. 11, T32S, R13E.
368	820'	SW¼, NW¼, NW¼, Sec. 17, T32S, R14E.
369	820'	SW¼, SW¼, NE¼, Sec. 17, T32S, R14E.

Table 1 (continued). Cultural Resources of Elk City Lake

Site Number	Elevation Above Mean Sea Level:	Legal Description:
14MY370	815'	SW¼, SW¼, NW¼, Sec. 17, T32S, R14E.
371	815'	NW¼, SE¼, SE¼, Sec. 8, T32S, R14E.
375	815'	SW¼, NE¼, SW¼, Sec. 7, T32S, R14E.
376	805'	SW¼, NE¼, Sec. 22, T32S, R14E.
377	820'	SE¼, NW¼, NW¼, Sec. 7, T32S, R14E.
378	800-810'	NE¼, SE¼, SE¼, Sec. 16, T32S, R14E.
379	805'	NE¼, SE¼, SE¼, Sec. 16, T32S, R14E.
395	810	NE¼, SW¼, NE¼, Sec. 16, T32S, R14E.
397	820'	NE¼, SW¼, SW¼, Sec. 11, T32S, R13E.
398	820'	NW¼, SE¼, SE¼, Sec. 7, T32S, R14E.
399	790-795'	SE¼, SE¼, NE¼, Sec. 19, T32S, R15E.
14MY1305	815'	SE¼, SE¼, SE¼, Sec. 8, T32S, R14E.
1306	820'	SW¼, NE¼, SW¼, Sec. 12, T32S, R13E.
1307	825'	SW¼, SE¼, Sec. 12, T32S, R13E.
1310	830'	SE¼, NE¼, SE¼, Sec. 15, T32S, R14E.
1321	810'	NW¼, NE¼, NW¼, Sec. 16, T32S, R14E.
1322	810'	NE¼, NW¼, NE¼, Sec. 17, T32S, R14E.
1323	825'	NE¼, NE¼, Sec. 13, T32S, R13E.
1324	775'	NW¼, SW¼, Sec. 9, T32S, R15E.
1325	800'	NE¼, NE¼, Sec. 16, T32S, R14E.
1326	800'	NW¼, SW¼, Sec. 14, T32S, R14E.
1327	805'	Center of the NE¼, Sec. 30, T32S, R14E.
1333	785'	NE¼, NW¼, Sec. 16, T32S, R15E.
1334	800'	NE¼, NW¼, Sec. 16, T32S, R15E.
1335	790'	SW¼, NE¼, Sec. 19, T32S, R15E.
1336	790'	SW¼, NE¼, Sec. 13, T32S, R14E.
1337	800'	NW¼, NW¼, Sec. 23, T32S, R14E.
1338	800'	NE¼, NW¼, Sec. 27, T32S, R14E.
1339	800'	SE¼, SE¼, Sec. 21, T32S, R14E.
1340	825'	NW¼, SW¼, NE¼, Sec. 18, T32S, R14E.
1341	792'	SE¼, NE¼, Sec. 22, T32S, R14E.
1342	815'	SW¼, NE¼, Sec. 7, T32S, R14E.
1343	775'	NW¼, NW¼, Sec. 21, T32S, R15E.
1344	800'	NW¼, NE¼, Sec. 28, T32S, R14E.
1345	780'	SE¼, SE¼, Sec. 17, T32S, R15E.
1346	815'	SW¼, SE¼, Sec. 7, T32S, R14E.
1347	820'	SW¼, NW¼, SE¼, Sec. 11, T32S, R13E.
1348	820'	NE¼, SE¼, Sec. 7, T32S, R14E.
1349	800'	SW¼, SW¼, Sec. 16, T32S, R15E.
1350	800'	SW¼, NW¼, Sec. 21, T32S, R15E.
1351	795-800'	SE¼, SE¼, Sec. 20, T32S, R15E.

Table 1 (continued). Cultural Resources of Elk City Lake

Site Number	Elevation Above Mean Sea Level:	Legal Description:
14MY1352	810'	NW¼, NW¼, SW¼, Sec. 14, T32S, R14E.
1353	800'	NW¼, NE¼, Sec. 18, T32S, R15E.
1354	825'	SE¼, SW¼, Sec. 6, T32S, R14E.
1355	825'	NW¼, SW¼, SE¼, Sec. 6, T32S, R14E.
1356	830'	SE¼, NE¼, Sec. 14, T32S, R14E.
1358	815'	NE¼, SW¼, Sec. 17, T32S, R14E.
1359	820'	NE¼, NW¼, Sec. 18, T32S, R14E.
1360	800'	NE¼, SW¼, Sec. 32, T32S, R15E.
1361	860'	NE¼, SE¼, Sec. 7, T32S, R15E.
1362	810'	NE¼, NE¼, Sec. 27, T32S, R14E.
1363	830'	SE¼, SE¼, Sec. 15, T32S, R14E.

Recommendations

In order to establish recommendations for additional archeological investigations or preservation techniques, the archeological sites will be divided into three zones. Zone one will be those sites within construction areas and the multiple purpose pool of the lake (Table 2). Zone two sites are within the floodpool zone of the lake (between 796 feet and 825 feet mean sea level) and will be listed in Table 3. Zone three, or sites on government owned or controlled land adjacent to the project, will be presented in Table 4.

Table 2. Sites in Zone One

Site Number	Cultural Affiliation	Type of Research Previously Conducted	Impact	Recommendations
14MY306	Undetermined	Survey, revisited during 1972 lake drawdown	Partially destroyed, inundated	*
14MY307	Archaic	Survey, revisited during 1972 lake drawdown	Partially destroyed, inundated	*
14MY309	Archaic, Early Ceramic, Middle Ceramic	Survey, limited testing	Inundated	*

Table 2 (continued). Sites in Zone One

Site Number	Cultural Affiliation	Type of Research Previously Conducted	Impact	Recommendations
14MY310	Early Ceramic or Middle Ceramic	Survey	Inundated	*
14MY311	Probable Middle Woodland	Survey	Badly eroded, inundated	*
14MY312	Middle Woodland	Survey	Inundated	*
14MY313	Early Ceramic	Survey	Inundated	*
14MY315	Early Ceramic Middle Ceramic	Survey, testing	Destroyed during construction	No additional investigations
14MY317	Early Ceramic Middle Ceramic	Survey, testing	Inundated	*
14MY318	Possible Early Ceramic, Middle Ceramic	Survey, testing	Destroyed during construction	No additional investigations
14MY319	Early Ceramic	Survey	Inundated	*
14MY320	Early Ceramic Middle Ceramic	Survey, revisited during 1972 lake drawdown	Partially destroyed, inundated	*
14MY321	Early Ceramic Middle Ceramic	Survey, testing	Destroyed during construction	No additional investigations
14MY322	Middle Woodland	Survey	Inundated	*
14MY323	Middle Woodland, Middle Ceramic	Survey, partial excavation	Inundated	*
14MY324	Middle Ceramic	Survey, limited testing	Destroyed during construction	No additional investigations
14MY326	Early Ceramic	Survey	Inundated	*
14MY327	Middle Woodland	Survey, revisited during 1972 lake drawdown	Partially destroyed, inundated	*

Table 2 (continued). Sites in Zone One

Site Number	Cultural Affiliation	Type of Research Previously Conducted	Impact	Recommendations
14MY335	Middle Ceramic	Survey, limited excavation	Destroyed during construction	No additional investigations
14MY347	Middle Woodland	Survey, revisited during 1972 lake drawdown	Partially destroyed, inundated	*
14MY349	Early Ceramic	Survey, revisited during 1972 lake drawdown	Partially destroyed, inundated	*
14MY350	Archaic, possibly Middle Woodland	Survey, testing	Partially destroyed/ inundated	*
14MY351	Middle Woodland	Survey	Inundated	*
14MY352	Early Ceramic or Middle Ceramic	Survey, minimal testing	Inundated	*
14MY399	Undetermined	Survey	Inundated	*
14MY1324	Undetermined	Survey	Inundated	*
14MY1333	Possibly Archaic	Survey	Inundated	*
14MY1335	Undetermined	Survey	Inundated	*
14MY1336	Undetermined	Survey	Inundated	*
14MY1341	Late Archaic or Middle Woodland	Survey	Inundated	*
14MY1343	Undetermined	Survey	Inundated	*
14MY1345	Undetermined	Survey	Inundated	*

* Presumably destroyed; however, should be visited if opportunity arises.

Table 3. Sites in Zone Two

Site Number	Cultural Affiliation	Type of Research Previously Conducted	Impact	Recommendations
14MY303	Probable Middle Ceramic	Survey	Periodically Inundated	Additional survey
14MY304	Archaic	Survey	Destroyed by agricultural terracing, periodically inundated	No additional investigations
14MY305	Early Ceramic Middle Ceramic	Survey, testing, partial excavation, individual National Register listing	Periodically inundated	Preservation
14MY314	Middle Ceramic	Survey	Periodically inundated	Testing
14MY316	Early Ceramic Middle Ceramic	Survey, testing	Periodically inundated	Preservation
14MY325	Probable Middle Woodland	Survey, limited testing	Periodically inundated	Additional testing
14MY328	Middle Woodland	Survey	Periodically inundated	Additional survey
14MY329	Undetermined	Survey	Periodically inundated	Testing
14MY334	Early Ceramic	Survey, testing	Periodically inundated, partially destroyed	Preservation of remaining portion of the site
14MY336	Undetermined	Survey	Periodically inundated	Testing
14MY341	Middle Woodland	Survey, testing	Destroyed	No additional investigations
14MY342	Early Ceramic Middle Ceramic	Survey, testing	Periodically inundated	Preservation
14MY354	Middle Ceramic	Survey	Periodically inundated	Testing

Table 3 (continued). Sites in Zone Two

Site Number	Cultural Affiliation	Type of Research Previously Conducted	Impact	Recommendations
14MY355	Middle Woodland	Survey	Periodically inundated	No additional investigations
14MY356	Early Ceramic and/or Middle Ceramic	Survey	Periodically inundated	No additional investigations
14MY357	Probable Middle Woodland	Survey	Periodically inundated	Additional survey
14MY358	Middle Woodland	Survey	Periodically inundated	No additional investigations
14MY359	Middle Ceramic	Survey	Periodically inundated	Testing
14MY360	Undetermined	Survey	Periodically inundated	Additional survey
14MY368	Middle Woodland	Survey	Periodically inundated	Testing
14MY369	Middle Woodland	Survey	Periodically inundated, never plowed	Preservation
14MY370	Middle Woodland	Survey	Periodically inundated	Testing
14MY371	Undetermined	Survey	Periodically inundated	Additional survey
14MY375	Middle Woodland	Survey	Periodically inundated	Testing
14MY376	Undetermined	Survey	Periodically inundated	Additional survey
14MY377	Early Ceramic or Middle Ceramic	Survey	Periodically inundated	Additional survey
14MY378	Late Middle Woodland or Early Middle Ceramic	Survey	Periodically inundated	Excavation

Table 3 (continued). Sites in Zone Two

Site Number	Cultural Affiliation	Type of Research Previously Conducted	Impact	Recommendations
14MY379	Undetermined	Survey	Periodically inundated	Additional survey
14MY395	Middle Woodland	Survey	Periodically inundated	Additional survey
14MY397	Undetermined	Survey	Periodically inundated	Additional survey
14MY398	Undetermined	Survey	Periodically inundated	Additional survey
14MY1305	Middle Woodland	Survey	Periodically inundated	Additional survey
14MY1306	Archaic	Survey	Periodically inundated	Testing
14MY1307	Undetermined	Survey	Periodically inundated	Additional survey
14MY1321	Undetermined	Survey	Periodically inundated	Additional survey
14MY1322	Probable Middle Woodland	Survey	Periodically inundated	Additional survey
14MY1323	Undetermined	Survey	Periodically inundated	Limited testing
14MY1325	Undetermined	Survey	Periodically inundated	Additional survey
14MY1326	Middle Ceramic	Survey	Periodically inundated	Testing
14MY1327	Undetermined	Survey	Periodically inundated	Additional survey
14MY1334	Probable Middle Ceramic	Survey	Periodically inundated	Additional survey
14MY1337	Early Ceramic	Survey	Periodically inundated	Testing

Table 3 (continued). Sites in Zone Two

Site Number	Cultural Affiliation	Type of Research Previously Conducted	Impact	Recommendations
14MY1338	Undetermined	Survey	Periodically inundated	Additional survey
14MY1339	Undetermined	Survey	Periodically inundated	Additional survey
14MY1340	Undetermined	Survey	Periodically inundated	Additional survey
14MY1342	Early Ceramic or Middle Ceramic	Survey	Periodically inundated	Testing
14MY1344	Undetermined	Survey	Periodically inundated	Additional survey
14MY1346	Undetermined	Survey	Periodically inundated	Additional survey
14MY1347	Undetermined	Survey	Periodically inundated	Additional survey
14MY1348	Probable Middle Woodland	Survey	Periodically inundated	Additional survey
14MY1349	Middle Woodland Middle Ceramic	Survey, testing	Destroyed	No additional investigations
14MY1350	Middle Ceramic	Survey, testing	Destroyed	No additional investigations
14MY1351	Middle Woodland	Survey, testing	Destroyed	No additional investigations
14MY1352	Early Ceramic or Middle Ceramic	Survey	Periodically inundated	Additional survey, limited testing
14MY1353	Middle Ceramic	Survey, testing	Destroyed	No additional investigations
14MY1354	Undetermined	Survey	Periodically inundated	Additional survey

Table 3 (continued). Sites in Zone Two

Site Number	Cultural Affiliation	Type of Research Previously Conducted	Impact	Recommendations
14MY1355	Possible Late Ceramic	Survey	Periodically inundated	Testing
14MY1358	Undetermined	Survey	Periodically inundated	Addtional survey
14MY1359	Undetermined	Survey	Periodically inundated	Additional survey
14MY1360	Undetermined	Survey	Periodically inundated	Testing
14MY1362	Undetermined	Survey	Periodically inundated	Testing

Table 4. Sites in Zone Three

Site Number	Cultural Affiliation	Type of Research Previously Conducted	Impact	Recommendations
14MY302	Early Ceramic and/or Middle Ceramic	Survey, testing	Under cultivation	Remove from cultivation, preservation
14MY344	Probable Middle Woodland	Survey	Under cultivation	Low potential, no additional investigations
14MY346	Middle Woodland	Survey	Adjacent to dam outlet	Testing
14MY362	Middle Woodland	Survey	Adjacent to dam outlet	Testing
14MY366	Middle Woodland, Possibly Archaic and Middle Ceramic	Survey	Under cultivation	Remove from cultivation, preservation
14MY367	Early Ceramic	Survey	Under cultivation	Remove from cultivation, preservation

Table 4 (continued). Sites in Zone Three

Site Number	Cultural Affiliation	Type of Research Previously Conducted	Impact	Recommendations
14MY1310	Early Ceramic	Survey, testing	Natural state, abundant roof fall	Preservation
14MY1356	Undetermined	Survey	Natural state	Additional survey
14MY1361	Undetermined	Survey	Natural state	Additional survey
14MY1363	Undetermined	Survey	Natural state	Limited testing

Additional Survey

Although two formal and years of opportune non-exclusive surveys have been conducted in Corps owned and/or controlled property at the Elk City lake project, it cannot be said to be complete. The nature of site preservation, i.e., burial and reexposure, makes this work ongoing. Surface conditions do change from season to season and year to year due to climate, cultivation, erosion, construction, etc. This is especially so in Zone Two which is, or may be, periodically inundated by the lake. Therefore, sites that were previously buried may become exposed. Additionally, a number of the sites previously recorded did not yield any diagnostic artifacts and therefore a cultural identification was not determinable. Despite the large number of sites identified in the inventory work, formal investigations for significance and actual site boundaries have yet to be determined for most of those listed. These sites should be revisited in the hope of obtaining diagnostic materials and sampled for exact limits which are vital to our understanding the prehistoric demography of the area. In general, conservation recommendations as well as surveys should be conducted within the project area at regular intervals as well as at opportune times of low water.

Testing

To date, 21 sites have thus far been tested within the Elk City lake locality. In addition, numerous sites have been recommended for testing to determine their potential for yielding significant archeological information. This is extremely important for those sites which exist in Zone Two which will probably be ultimately destroyed by the fluctuating lake level. These sites should be tested to determine whether they contain an in situ cultural stratum capable

of yielding significant data on settlement patterns, mortuary practices, subsistence activities, and other specific cultural activities.

At times, sites can be minimally tested with coring devices such as the Oakfield soil sampling tool. This device extracts a one inch in diameter core, one foot in length. In certain areas, the tool can take samples as deep as three feet. The soil core is inspected for flecks of burned earth, charcoal, chert chips, etc., and these materials, if located, could indicate the presence of a buried cultural zone. This tool is also a valuable asset in determining the actual depth of a soil deposit.

A few of the sites in the Elk City lake area consist of an exposure of cultural material eroding from the creek bank at a considerable depth below the top or lip of the bank. A prime example of this is 14MY1362 which consists of a cultural zone approximately 50 meters in length which is exposed in the right bank of Card creek, 1.5 meters below the lip of the bank. A coring device is virtually useless in this situation and either a test pit and/or test trench is necessary to determine the site's potential.

Some of the sites are listed as not requiring any additional archeological investigations. These determinations were usually based on several factors, i.e., very limited amount of exposed cultural material, little to no in situ subsurface evidence, disturbance by mechanical forces such as dam construction and agricultural terracing and disturbance by natural forces such as erosion and the fluctuating lake level.

Excavation

To date, three sites (14MY305, 14MY323 and 14MY335) have thus far been excavated in the Elk City lake locality. Site 14MY378, a rock shelter located on the north side of Elk City lake, is also recommended for excavation. This site is quite small and does not contain the abundant amount of roof fall which was encountered at the other rock shelters in the Elk City lake locality. The preservation of faunal and floral material is excellent and presents a valuable resource for determining the subsistence base of the late Middle Woodland/early Middle Ceramic groups. This site also appears to be subjected to vandalism which is quite evident by the pothole encountered in the floor of the shelter. Preservation is quite important until the site can be studied.

Preservation

The expansion of the modern American culture with its necessary terrain-modifying land use activities will soon

obliterate all but the most deeply buried or isolated archeological sites. Such remains are a nonrenewable resource and if we are to learn about these past cultures the evidence must be preserved now because each day there is less. Therefore, a sizable quantity of the prehistoric sites have been recommended for preservation.

There are a variety of preservation methods available, and if archeologists and land managers work together these sites can be preserved. One such method is to design hiking trails, camping facilities, boat ramps, etc., to avoid presently known archeological sites. This method has already been utilized at Elk City lake in 1979 when a hiking trail was being laid out on the north shore of the lake. Archeologists, land management personnel and a Corps representative contributed their input and the trail was designed to avoid a number of rock shelters.

Cultivation is probably one of the most constant, culturally destructive processes which can occur on an archeological site. Cultivation creates a mixing of the uppermost soil zones and exposes the site to erosion. Therefore, if a significant or potentially significant site is in an area set aside for agriculture it has been recommended that the area be removed from cultivation. If the area is allowed to return to its natural state, or if it is planted to grass etc., the site can be preserved. The Infinity site, 14MY305, is one such site that is currently returning to a natural vegetation. The process of removing lands from cultivation should be the joint effort of a professional archeologist and a land manager from Elk City lake. The archeologist can show the manager the horizontal extent of the site and he can then remove the site location from cultivation. This will help minimize the amount of land which is necessary to insure the preservation of the site.

Monitoring

Although no specific site is recommended for monitoring, a professional archeologist should be consulted if any construction activity is planned in the vicinity of a site. Even those sites which are not recommended for additional investigations may still contain artifacts or random, deeply set features still in situ which could be worthy of individual collection or recording. The possibility also exists of locating more deeply buried cultural remains which were not obvious during previous archeological investigations.

Conclusions

The importance of the archeology of the Elk City lake locality lies not in each individual site, but in the interrelationship of the sites in the valley as a whole. The Society's archeological program has had involvement with most of the lake projects in Kansas. Of all those projects, Elk City is one of the most outstanding in regard to proven and potentially significant archeological resources. The historic value of these sites lies within the scientific data that is obtained through carefully planned observation, excavation, recovery, analysis and preservation of the sites in the Elk river valley.

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APPENDIX A

SOIL TYPES OF THE ELK CITY LAKE AREA
(Department of the Army, Corps of Engineers 1975:D1-D3)

Verdigris silt loams. These soils are found on the floodplains of the Elk river and its larger tributary streams. They include silt loams and silty clay loams and may be quite deep. They have a neutral to slightly acid pH, are relatively well-drained, and comprised the bulk of the prime agricultural land in the area of the lake prior to impoundment of water.

Osage clays. These are fine grained and slightly acid soils found in flat or depressed backwater areas. They include silty clay loams and clays which may be quite deep and which are poorly drained with slow permeability.

Summit silty clay loams. These are neutral pH upland soils found on the valley slopes and range from silty clay loams to clays. They may be up to 84 inches in depth and are well drained on the surface but have slow permeability.

Dennis silt loams. These range from silt loams to clay loams and are found in upland areas. They are derived from sandy shales and range in pH from moderately acid to slightly alkaline. They are well drained on the surface but have slow permeability. Dennis silt loams occur as deep as 79 inches.

Stephenville and Darnell complex. These soils develop in upland areas where hardwood forest is growing in sandstone. Their contact with bedrock is only 20 to 48 inches below the surface.

Oswego silty clay loam. This is a generally dark particle soil with very slow permeability and poor internal drainage.

Crawford silt loam. This is a finely textured prairie soil containing limestone inclusions.

Boone stony sandy loam. This soil is of medium texture; it is found on rolling land.

APPENDIX B

VEGETATIVE TYPES OF THE ELK CITY LAKE AREA
(Department of the Army, Corps of Engineers 1975:D-1)

Post oak-blackjack oak. This type is a forest/grassland mixture. The predominant species represented are post oak and blackjack oak. Other associated species are bitternut hickory, shagbark hickory, bur oak, chinquapin oak, northern red oak, Osage orange, and redbud.

Oak-hickory. The most frequently occurring species in this type are bur oak, northern red oak, pin oak, shagbark hickory, and shellbark hickory. Associated species may include bitternut hickory, blackjack oak, chinquapin oak, post oak, redbud, and Osage orange or green ash, hackberry, pecan, American elm, and black walnut depending upon available site moisture.

Elm-ash-cottonwood. The predominant species in this type are American elm, green ash, and eastern cottonwood. Other species include American sycamore, willow, black walnut, hackberry, bur oak, and box elder.

Bluestem prairie. This type is a mixture of grasses and herbaceous woody plants. Big and little bluestem grasses predominate depending upon terrain, and other species include broomsedge, bluestem, bitter sneezeweed, canadian thistle, Indiangrass, Johnson grass, Leavenworth eryngo, purple top, side oats grama, silver bluestem, snow-on-the-mountain, stiff goldenrod, switchgrass, and witch grass.

APPENDIX C

FAUNA OF THE ELK CITY LAKE AREA

FISH (Cross 1967)

Class *Osteichthes*	
Order *Holostei*	
Family *Lepisosteidae*	
Lepisosteus osseus	Long-nosed gar
Order *Teleostei*	
Family *Clupeidae*	
Dorosoma cepedianum	Gizzard shad
Family *Esocidae*	
Esox lucius	Northern pike
Family *Cyprinidae*	
Cyprinus carpio	Carp
Notemigonus crysoleucas	Golden shiner
Hybopsis storeriana	Silver chub
Phenacobius miribilis	Sucker-mouthed minnow
Notropis umbratilis	Red-finned shiner
Notropis camurus	Blunt-faced shiner
Notropis lutrensis	Red shiner
Notropis volucellus	Mimic shiner
Notropis buchanani	Ghost shiner
Pimephales promelas	Fathead
Pimephales vigilax	Bull-headed minnow
Pimephales tenellus	Slim minnow
Pimephales notatus	Blunt-nosed minnow
Campostoma anomalum	Stoneroller
Family *Catostomidae*	
Ictiobus cyprinellus	Big-mouthed buffalo
Ictiobus niger	Black buffalo
Ictiobus bubalus	Small-mouthed buffalo
Carpiodes carpio	River carpsucker
Minytrema melanops	Spotted sucker
Moxostoma erythrurum	Golden redhorse
Moxostoma carinatum	River redhorse
Moxostoma macrolepidotum	Northern redhorse
Family *Ictaluridae*	
Ictalurus melas	Black bullhead
Pylodictis olivaris	Flathead
Noturus flavus	Stonecat
Noturus nocturnus	Freckled madtom
Noturus miurus	Brindled madtom
Family *Cyprinodontidae*	
Fundulus notatus	Black-striped topminnow

Family *Poeciliidae*	
Gambusia affinis	Mosquitofish
Family *Atherinidae*	
Labidesthes sicculus	Brook silverside
Family *Centrarchidae*	
Micropterus punctulatus	Spotted bass
Micropterus salmoides	Largemouth
Lepomis cyanellus	Green sunfish
Lepomis macrochirus	Bluegill
Lepomis humilis	Orange-spotted sunfish
Lepomis megalotis	Longear
Pomoxis annularis	White crappie
Family *Percidae*	
Percina phoxocephala	Slender-headed darter
Percina caprodes	Longperch
Percina copelandi	Channel darter
Etheostoma whipplei	Red-finned darter
Etheostoma spectabile	Orange-throated darter
Etheostoma gracile	Slough darter
Family *Sciaenidae*	
Aplodinotus grunniens	Freshwater drum

AMPHIBIANS (Smith 1956)

Class *Amphibia*	
Order *Caudata*	
Family *Cryptobranchidae*	
Cryptobranchus alleganiensis	Hellbender
Family *Salamandridae*	
Notophthalmus viridescens	Eastern newt
Family *Ambystomidae*	
Ambystoma maculatum	Spotted salamander
Ambystoma texanum	Narrow-mouthed salamander
Ambystoma tigrinum	Tiger salamander
Family *Proteidae*	
Necturus maculosus	Mudpuppy
Order *Salientia*	
Family *Bufonidae*	
Bufo terrestris	American toad
Bufo woodhousii	Garden toad
Family *Hylidae*	
Acris crepitans	Northern cricket frog
Pseudacris nigrita	Striped chorus frog
Hyla versicolor	Common tree frog
Family *Ranidae*	
Rana catesbeiana	Bullfrog
Rana pipiens	Leopard frog
Family *Microhylidae*	
Gastrophryne olivacea	Western narrow-mouthed frog

REPTILES (Smith 1956)

Class *Reptilia*	
Order *Testudines*	
Family *Kinosternidae*	
Sternotherus odoratus	Common musk turtle
Kinosternon flavescens	Yellow mud turtle
Family *Chelydridae*	
Macroclemys temminckii	Alligator snapping turtle
Chelydra serpentina	Common snapping turtle
Family *Emydidae*	
Terrepene carolina	Carolina box turtle
Terrepene ornata	Ornate box turtle
Graptemys geographica	Map turtle
Graptemys pseudogeographica	False map turtle
Chrysemys picta	Painted turtle
Pseudemys floridana	Saw-toothed slider
Pseudemys scripta	Elegant slider
Family *Trionychidae*	
Amyda mutica	Smooth soft-shelled turtle
Amyda ferox	Spiny soft-shelled turtle
Suborder *Sauria*	
Family Iguanidae	
Crotophytys collaris	Collared lizard
Phrynosoma cornutum	Texas horned lizard
Family *Scincidae*	
Scincella laterale	Brown skink
Eumeces anthracinus	Coal skink
Eumeces fasciatus	Common five-lined skink
Eumeces obsoletus	Sonoran skink
Eumeces septentrionalis	Prairie skink
Family *Teiidae*	
Cnemidophorus sexlineatus	Six-lined racerunner
Family *Anguidae*	
Ophisaurus attenuatus	Glass-snake lizard
Suborder *Serpentes*	
Family *Colubridae*	
Carphophis amoenus	Worm snake
Diadophis punctatus	Eastern ring-necked snake
Heterodon platyrhinos	Common hog-nosed snake
Heterodon nasicus	Western hog-nosed snake
Opheodrys aestivus	Pough green snake
Opheodrys vernalis	Smooth green snake
Coluber constrictor	Racer
Masticophis flagellum	Coachwhip
Elaphe guttata	Rat snake
Elaphe obsoleta	Pilot black snake
Pituaphis melanoleucus	Bull snake

Family *Colubridae* (continued)	
Lampropeltis calligaster	Blotched king snake
Lampropeltis getulus	Speckled king snake
Lampropeltis triangulum	Red king snake
Sonora episcopa	Plains ground snake
Tantilla gracilis	Slender tantilla
Natrix erythrogaster	Yellow-bellied water snake
Natrix grahamii	Graham water snake
Natrix rhombifera	Diamond-backed water snake
Storeria dekayi	DeKay snake
Storeria occipitomaculata	Red-bellied snake
Thamnophis ordinatus	Common garter snake
Thamnophis radix	Plains garter
Thamnophis sauritus	Ribbon snake
Tropidoclonion lineatum	Lined snake
Family *Crotalidae*	
Ancistrodon contortrix	Copperhead
Sistrurus catenatus	Massasauga
Crotalus horridus	Timber rattler

MAMMALS (Hall 1955)

Class *Mammalia*	
Order *Marsupialia*	
Family *Didelphidae*	
Didelphis linnaeus	Opossum
Order *Insectivora*	
Family *Soricidae*	
Blarina brevicauda	Short-tailed shrew
Cryptotis parva	Little short-tailed shrew
Family *Talpidae*	
Scalopus aquaticus	Eastern mole
Order *Chiroptera*	
Family *Vespertilionidae*	
Myotis lucifugus	Big myotis (bat)
Pipistrellus subflavus	Pippistrelle
Eptesicus fuscus	Big brown bat
Nycticeius humeralis	Evening bat
Lasionycteris noctivagans	Silvery-haired bat
Lasiurus cinereus	Hoary bat
Lasiurus borealis	Red bat
Family *Molossidae*	
Tadarida brasiliensis	Brazilian free-tailed bat
Order *Edentata*	
Family *Dasypodidae*	
Dasypus linnaeus	Nine-banded armadillo
Order *Lagomorpha*	
Family *Leporidae*	
Sylvilagus floridanus	Eastern cottontail
Lepus californicus	Black-tailed jack rabbit

Order *Rodentia*	
Family *Sciuridae*	
Sciurus carolinensis	Gray Squirrel
Sciurus niger	Fox squirrel
Marmota monax	Woodchuck
Spermophilus tridecemlineatus	Thirteen-lined ground squirrel
Spermophilus franklinii	Franklin's ground squirrel
Tamias striatus	Eastern chipmunk
Glaucomys volans	Southern flying squirrel
Family *Heteromyidae*	
Perognathus hispidus	Coarse-haired pocket mouse
Family *Castoridae*	
Castor canadensis	Beaver
Family *Cricetidae*	
Reithrodontomys fulvescens	Fulvous harvest mouse
Peromyscus maniculatus	Deer mouse
Peromyscus leucopus	Woods mouse
Peromyscus boylii	Brush mouse
Sigmodon hispidus	Hispid cotton rat
Neotoma floridana	Eastern wood rat
Ondatra zibethicus	Muskrat
Microtus ochrogaster	Prairie vole
Microtus pineforum	Pine vole
Family *Muridae*	
Rattus norvegicus	Norway rat
Mus musculus	House mouse
Family *Zapodidae*	
Zapus hudsonius	Meadow jumping mouse
Family *Erethizontidae*	
Erethizon dorsatum	Porcupine
Order *Carnivora*	
Family *Canidae*	
Canis latrans	Coyote
Canis lupus	Gray wolf
Vulpes fulva	Red fox
Urocyon cinereoargenteus	Gray fox
Family *Ursidae*	
Ursus americanus	Black bear
Family *Procyonidae*	
Procyon lotor	Raccoon
Family *Mustelidae*	
Mustela vison	Mink
Mustela frenata	Long-tailed weasel
Taxidea taxus	Badger
Mephitis mephitis	Striped skunk
Spilogale putorius	Spotted skunk
Lutra canadensis	River otter

Family *Felidae*	
Felis concolor	Mountain lion
Lynx rufus	Bobcat
Family *Cervidae*	
Cervus canadensis	Elk
Odocoileus virginianus	White-tailed deer
Family *Bovidae*	
Bison bison	Bison

APPENDIX D

NATIONAL REGISTER INFORMATION

The State Historic Preservation Office of the Kansas State Historical Society submitted the Infinity Site, 14MY305, for consideration to the National Register of Historic Places on November 20, 1970. The nomination was for the site's proven archeological significance and capability of contributing to our knowledge of the cultural history of Kansas. The Infinity Site was listed on the National Register on March 24, 1971.

On April 4, 1977, the State Historical Preservation Office further nominated the area encompassing Elk City lake as an archeological district for inclusion to the National Register. The nomination was for the area's obvious potential to contribute to the cultural history of Kansas. The Elk River Archeological District was listed on the National Register on September 13, 1978. Presently, the district includes all of the known archeological resources in the Elk City lake basin. The boundaries for the district were established along lines drawn a safe distance away from the known archeological sites in the project area.

END 10-81